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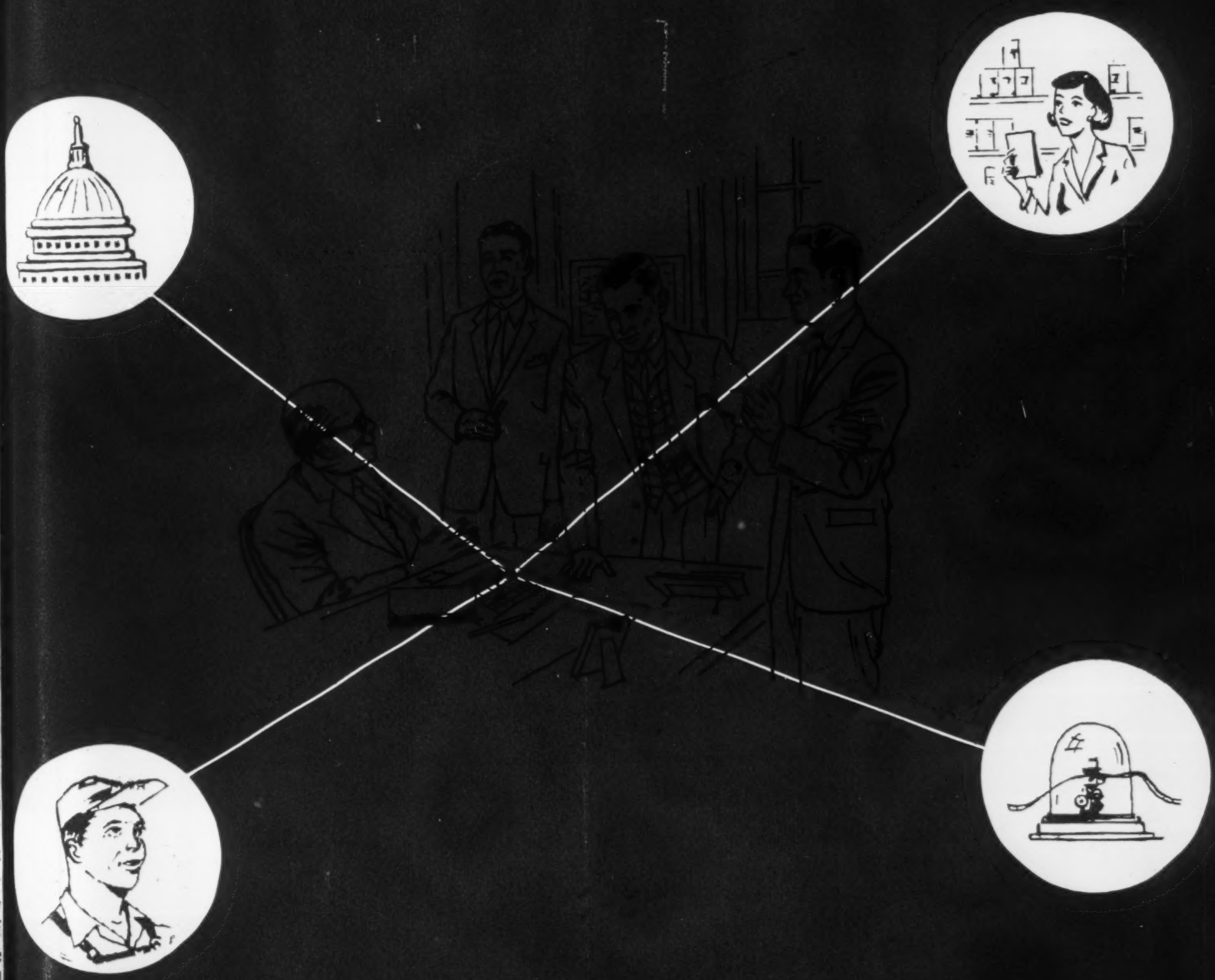

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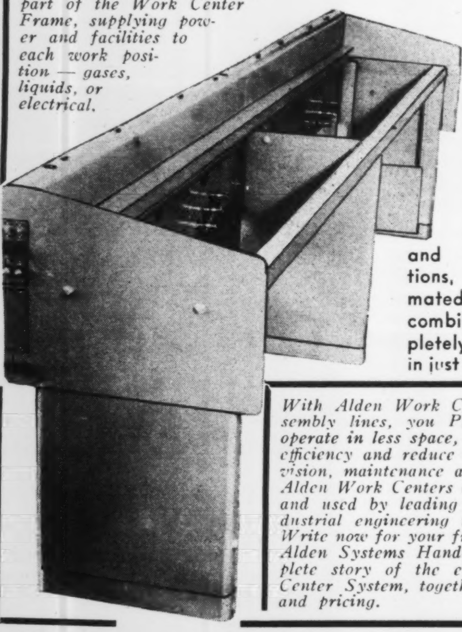

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LEADERSHIP DEVELOPMENT WORKSHOP

The S.A.M. Indianapolis Chapter will host the S.A.M.-N.T.L. Workshop in Leadership Development, in a five-day meeting, November 8-13. The Morris Inn, located on the campus of Notre Dame University at South Bend, has been selected as the site for the Workshop.

Previously conducted by S.A.M. Chapters in Cincinnati, San Francisco, and Milwaukee, this Workshop has gained national recognition as one of the most effective methods to be devised in the area of management training. It uses the "laboratory" method of training which stresses the technique of giving participants a chance to learn more about themselves and to practice leadership skills in an environment which simulates 'on-the-job conditions. The Workshop consists of three main parts:

- A Leadership Laboratory where groups of 15 under the guidance of a Staff trainer study various behavior problems within the group for the purpose of increasing their understanding of group relations, improving skills of leadership, developing greater insight, and acquiring a better understanding of the behavior of others.
- Skill practice groups, where individuals have an opportunity to work on job cases and to analyze human relations problems through demonstrations.
- Information sessions, where the staff, through informational lectures, explain some of the things happening in the Laboratory group sessions and also bring-up-to-date information on findings in the field of social science research.

Registration fee, including tuition and all Workshop materials, is $200.00; room and meals are extra. Registrations, which are limited to 60, will be accepted on a "first come, first served basis." To register, or to obtain more information, write to Mr. Norman F. Beisswenger, Standby Office Service, Inc., 130 E. Washington Street, Indianapolis, Indiana.

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VOL. 24 NO. 9
SEPTEMBER 1959

ADVANCED Management

Progress Through Enlightened Management

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ADVANCED
Management
SEPTEMBER • 1959

Measuring the Efficiency of Management from a Society's Viewpoint

Management is accountable to four bosses: the investor, the consumer, the worker and the Government.

by HENRY VAN RIPER SCHEEL

Mr. Scheel was a founder-member of the Taylor Society; testified with Henry L. Gantt, for Louis D. Brandeis, before the Interstate Commerce Commission, when and where the term, "Scientific Management", was coined. In World War I he devised and supervised the then-new system of graphically reporting the movements and hourly activities of all ships in all world-ports. He was a founder-member of the U. S. Institute for Textile Research (now the Textile Research Institute); was Treasurer and Vice President of Botany Mills. In World War II he served as Chief Cotton Consultant, Office of Civilian Requirements, War Production Board.

THE BASIC ingredients determining the pattern of any modern enterprise have not changed through the centuries. A glance at the Middle Ages will illustrate.

A typical enterpriser of that day sensed the need-and/or-desire of the nobility for spices and perfumes,—to help keep meat sweet and to alleviate the assaults of caustic detergents and the cumbersome botherations of hot baths. He had potential *customers*.

He arranged to borrow monies and gold from the money-lenders who in turn insisted on written records and repayment with interest, plus a big share of the profits. He had *investors*.

He engaged soldiers to keep order; slaves and serfs for the heavy work; associates who could read and write, keep records and help him supervise elements of the venture. He promised them pay, even also offered non-financial incentives in the forms of freedom for the slaves, glamorous reputations for the associates and the lure of titles and honors purchasable out of the proceeds from the sale of spices and perfumes. He had *workers*.

Finally, returning from the Arabias via the Rhine River Valley, the robber-barons descended from their castles to levy "toll for unmolested passage" on the goods being brought back by the expedition. The enterpriser paid *taxes*.

The same basic ingredients — Customers, Investors, Workers, Taxes — underlayered enterprise throughout the days of the guilds, the explorers, the colonizers, the industrial revolution. They have continued down into our day as the four basic elements whose interrelationship determines the pattern of a business enterprise at any given time.

Parties-At-Interest

If we look at these four elements in the broad context of society we can validly call each of them a party-at-interest within the common enterprise. We can identify the parties as Owner (Investor), Worker, Customer, and — with respect to taxes based on earnings — Government. And because each is a party-at-interest, each requires and rightfully demands from the total enterprise a just portion of the total benefits accrued to the enterprise. (In a sense, each of us, as individuals, walks within a framework similar to the quadrilateral bounding the business enterprise. We are Customer when we buy anything; Investor when we pay premiums on an insurance policy; Worker when we exchange services for pay; and the Government collects taxes on our earnings.)

The parties-at-interest in any common venture this side of heaven inevitably collide at times in interpreting "just portions of the total benefits". Disproportional selfishness by any party within the quadrilateral bounding the enterprise — Owner, Worker, Customer, Government — can distort the total balance of relationships so severely that the very life of the enterprise may be threatened and the benefits to all be cut off. Such disproportionality on a wide enough scale would spell the end of the free-enterprise system. When we mentally configure such terms as "buyer's market", "seller's market", "labor monopoly", "swollen bureaucracy", "labor against management", we begin to sense the enormous significance of each term in relation to our own lives and to the structure of our free society.

The Role of Management

The benefits accruing to the parties-at-interest in a business enterprise are the responsibility, functionally, of the Management of that enterprise. The management function is a delicate, difficult, demanding task. It answers to four bosses: Owner (Investor), Customer, Worker, and — some steps removed — Government. It must exercise a skill of leadership and authority that will produce a total-enterprise performance yielding just benefits to Owner, Customer and Worker while maintaining harmony among all three; that will keep the enterprise competitive; that, finally, will continue one of the conditions of the business franchise: payment of taxes.

Said another way, every Management of a business enterprise can be expected to have arranged for the company to (1) make more than Government Bond interest for the Owner on the Owner's dollars in the business; (2) pay more than cost-of-living wages to Workers; (3) furnish Customers with values in excess of purchase-price; (4) yield more taxes for Government than would be a normal "tithing" of 10% of the company profits.*

The management function, then, is dealing constantly with a mutual interdependency among its three immediate bosses: Owner, Worker and Customer. This interdependency shows up vividly in the benefits accruing separately to each. A hypothetical case will illustrate.

---

*In what follows, there are referred to as "BENEFITS": (1) the total of profits as earned for the Owner/Investor; (2) the total remuneration to Worker; (3 the total value to Customer of what he bought and paid for; and (4) the total of taxes paid to Government. Termed "EXTRA-BENEFITS" are the amounts of 'differences' remaining, respectively, when from BENEFITS there are subtracted the so-called "NORMS-DEDUCTIBLE". The Norms-Deductible include: (1) for "I", the calculated yield-on-government-bonds figure; (2) total costs-of-living as calculated for "W"; (3) for "C" the actually paid-for total purchase-prices; and (4) for "T" what the 'tithing-rate' totals amount to. It is considered that the Extra-Benefits are the values of greatest significance when the performance of an enterprise, i.e. its Management, is to be evaluated.

In one year a certain company's books showed a profit-before-taxes of exactly $100,000, meaning that the Owners were $100,000 richer-before-taxes at the end of that year than they had been at the beginning.

Suppose, however, the wage rates had been enough higher that year to make the total wages actually paid just $100,000 greater. Then, the Owner's gain (company profits-before-taxes) would have been zero, but the Workers would have been better-off $100,000 (less Government taxes thereon).

Or, if during the year there had been in effect an additional sales-discount sufficient to have made the company's sales-figure exactly $100,000 less in amount, then the Owner's gain-before-taxes would have been zero, the Worker's position unchanged; but the Customers would have been richer by this $100,000 still remaining in their bank accounts.

This illustration reveals a driving force that is, substantially, one and the same force in the way it operates upon Customer, Worker and Owner as each seeks his just benefits from the business enterprise. It is a force which alert Management must recognize and deal with effectively. Under the last-mentioned condition in the illustration, there would have been an increase in the dollar-amount of the difference between the value to the Customers of what they bought because of their NEED-AND/OR-DESIRE, and the value to them of the cash paid to acquire what was purchased. Does it not follow (1) that there must be present some measurable advantage to the purchaser when he parts with his money to satisfy a need-and/or-desire possessing or possessed by him? and (2) that every purchaser can be said, in a quite legitimate sense, to be "richer" for having made any purchase whatever? and (3) that the driving-force operative upon Customer is like-and-similar to the driving-force operative upon Worker (i.e. difference between earnings and cost-of-living), and upon Owner (difference between corporate profits and yield on Government bonds)?

These are the forces with which Management must deal in satisfying the parties-at-interest. These are the dynamics of the enterprise within the social framework as well as the hard-core connotation. Generally speaking, when reductions in avoidable wastes and inefficiencies are accomplished, Management then has at its disposal additional new-wealths available as added benefits for one or more of the parties-at-interest; otherwise, any increase in benefits which Management permits or arranges for any one of the parties-at-interest can be only at the expense of one or more of the other parties-at-interest.

Management Performance

The interrelationships of the basic elements — Customer (C), the Owner or Investor (I), the Worker (W) and the Government Tax (T), are determinants at any given time of the pattern or "state" of the business enterprise. Therefore a reflection of Management performance at that time, can be represented pictorially and made understandable to all parties concerned for purposes of analysis and rectification or improvement. Before describing the construction and uses of such picturings, a word on the type of data to be gathered is in order.

Punched Cards

Punched cards for automatic sorting are ideally suited and readily available today. Their use would facilitate the compilation of additional factual data, including:

Under C (Customer) data, sales should be broken down into categories having their different need-and/or-desire values (a public utility sells electric power to householders, to industry, to municipalities for street lighting, and to other power companies).

Under I (Investor or Owner) a classification by size and type of investor should be maintained (taxes being payable by Investors on the dividends as received but only at long intervals on their capital gains).

Under W (Workers), calculation should be made on the extra-benefits and on the taxes paid by workers on their earnings, instead of on general averages; and data should be built up from the totals of the categories of workers as classified by the standards-of-living versus the costs-of-living of the individuals in each category.

For T (Taxes), there should be included all Government taxes having their origins, directly or even indirectly, in or from the operation of the enterprise (sales taxes, if any; income taxes paid by investors and by officers and workers, etc.).

The Investor and Taxes cards should also include the largely unrecognized effects of Inadequate-Depreciation-Charges as well as Changes-in-the-Value-of-the-Dollar (inflation) in order to depict accurately the NET-EXTRA-BENEFITS remaining to I and to T after the "a/c Depreciation" and "a/c Inflation" bad effects have been deducted from their EXTRA-BENEFITS.

The Diagrams

Following are the premises upon which the proposed diagrams are based, together with explanations and interpretations as bearing on the diagrams shown:

In a mechanistic sense, Management can be considered to have been in control of the Forces which resulted in the mentioned Benefits & Extra-Benefits & Net-Extra-Benefits to Customer, Investor, Worker and Taxes. The resulting four-sided figurations, as to size and shape, are pictures of the PERFORMANCE ACCOMPLISHED BY MANAGEMENT.

The unique four-pointed DIAGRAM shows, in a single picture and as a unified whole, what the Extra-Benefits and the Net-Extra-Benefits for each of the parties-at-interest are calculated to have been for the NEW PERIOD relatively to those in another or BASE-PERIOD.

One type of enterprise requires contributions from the individual parties-at-interest in proportions different from those required in another type of enterprise (a power-utility needing costly fixed-asset-items but little labor versus a garment-manufacturer needing much labor but relatively little machinery). Accordingly the dollar Benefits and Extra-Benefits accruing to the parties-at-interest in one type of enterprise are properly different from those in another type of enterprise. However, for purposes of comparative measurings, it is assumed that for any enterprise, the several extra-benefits as calculated for the Base-Period are in correctly-proportioned and 'fair' relationships to each other; and deserve to be pictured by OC, OI, OW, & OT Force-Lines of equal lengths in the resulting exactly-square-&-regular four-sided Base-Diagram.

The values for the New-Period are used to determine the lengths of the OC, OI, OW, & OT Force-Lines, each scaled according to the value each had in its Base-Period. The New-Period Force-Lines determine the shape and area of the 'New' quadrilateral in the diagram.

After calculations based on the company's book-figures and on public data, for a Base-Period and a New-Period, have resulted in values for Benefits, Extra-Benefits & Net-Extra-Benefits as shown in Table #1, the procedure for the construction of the company diagram, is: (1) to assign to the Base-Period's OC, OI, OW & OT equal-length-lines the Extra-Benefit values of 1.39, 1.93, 1.29 & 1.28 (thousands or millions of dollars) respt; (2) to spot the Net-Extra-Benefit values of 1.47/1.93 and 1.06/1.28 on the OI & OT lines, respt (see Fig. #1); (3) on the OI line, to spot 1.80/1.93 (1.47 plus 0.33 being 1.80) as "a/c Inadequate Depreciation",—the difference between 1.80 and 1.93, i.e. 0.13, being for "a/c Dollar Inflation". And similarly on the OT Force-Line spot 1.22 for "a/c Inadequate Depreciation", etc., etc.

For the New-Period, the Diagram will be developed from New-Period Force-Lines drawn to the scales of each in the Base-Period (see Fig. #2). The irregular configuration results from Force-Lines at 1.08/1.39 for OC, 1.54/1.93 for OI, 1.87/1.29 for OW, and 1.93/1.28 for OT; etc., etc.

Superimposing Fig. #2 upon Fig. #1, we show in a single picture (see Fig. #3) the directly-comparable separate Force-Line-Values for the New-Period relatively to Base-Period values; also the resulting shapes are visually comparable and are measurable for the determining of the numerical Index-Figure of the Diagram. The relationships of the areas and of their centers-of-gravity of the New-Quadrilateral versus the Base-Quadrilateral have a significance as is given expression in the INDEX-FIGURE which is the numerical measurement of Over-All Management Performance, on a relative basis, when viewed from a 'Society's Viewpoint'.

Three-Dimensional Model of Diagram

In terms of a three-dimensional model of the depicted Diagram, Enterprise can be imagined to be doing its work with its backside supported by a stool having four crossed-legs reaching to the floor. Of course, to be fully useful the seat should be comfortably-flat and in a quite horizontally-level position. Management's functionings can be imagined to be of effect at the point-of-crossing of the four legs representing respectively "C" & "I" & "W" & "T" Extra-Benefits.

Table #1

Parties-At-Interest		Benefits	Norms-Deductible	Net-Extra-Benefits	a/c Depreciation	a/c Inflation	Extra-Benefits
Base-Period							
Customer	C	1.81	0.42	1.39	—	—	1.39
Investor	I	2.48	1.01	1.47	0.33	0.13	1.93
Worker	W	2.35	1.06	1.29	—	—	1.29
Taxes	T	1.56	0.50	1.06	0.16	0.06	1.28
New-Period							
Customer	C	1.80	0.72	1.08	—	—	1.08
Investor	I	2.40	2.24	0.16	0.82	0.60	1.54
Worker	W	4.23	2.36	1.87	—	—	1.87
Taxes	T	2.38	1.15	1.23	0.41	0.30	1.93

Depending upon the type of enterprise (self-service supermarket, pipeline operation, barber-shop, manufacture of spirituous liquors) will depend the relative sizes of the contributions made, and of the sizes of the fair-and-correct dollar-amounts of Extra-Benefits accruable to the several parties-at-interest. But, for the four legs to support the seat-place of Enterprise's stool, all of the legs must be of the same length, — as is shown in the Base-Period-Diagram — though it can be imagined that the legs are of appropriately-different cross-sections or made of different materials as in proportions to the individual values.

However, when the New-Period-Diagram data show the changes in Extra-Benefits for each of the parties-at-interest (1) to be proportionately the same as in the Base-Period, then the New-Period quadrilateral too will be four-square and equilateral (meaning a larger or smaller, but horizontally-level stool-seat for Mr. Enterprise to sit upon); or (2) to be proportionately different and, therefore, the shape of the New-Period Four-Sided Figuration to be irregular instead of four-square (meaning an unlevel, inclined, less practical seat for Mr. Enterprise to be supported upon).

It is to be expected that some "very queer" shapes will result when seriously-disproportionate changes have taken place in New-Period versus Base-Period relationships, — for instance,

FIG. 1

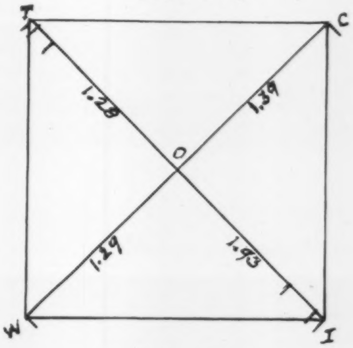


FIG. 2

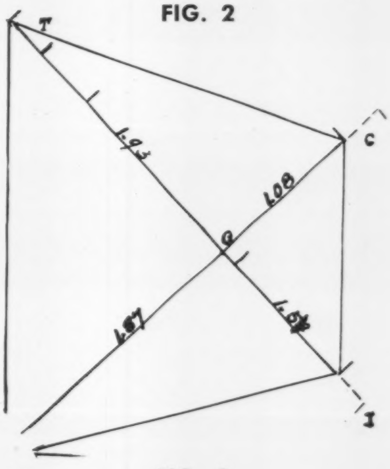
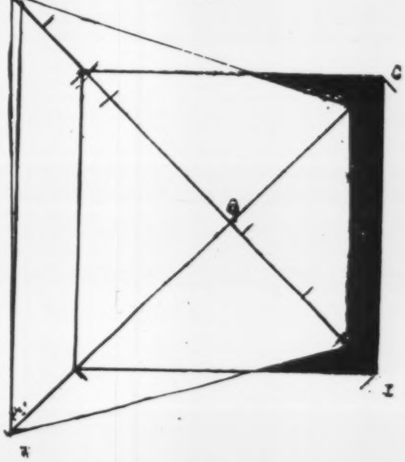


FIG. 3



(*Continued on page* 11)

THE ESSENCE OF DECENTRALIZATION

by Edward C. Schleh

"Each individual management job should be put in business for itself."

IT IS NORMAL for any supervisor or executive to jump too quickly to the decision, "To get it done right, I'd better do it myself".

Obviously, as a firm grows, there must be delegation. The problem of decentralization increases as the firm grows to large proportions, because then the area of action tends to be more and more remote from the chief executive. His natural tendency, then, (in order to keep informed) is to establish a stronger and stronger centralized control on all operations. Inevitably, this leads to an excessive number of decisions that come to the chief executive's doorstep. He would like to be relieved of them. He would like to decentralize. Although this is easy to say, it is very often difficult to effectively work out all the details in practice.

In this age of mergers, additional centralization problems have come into prominence. Although at first any company that has purchased another suggests that, "We'll let the old management run the firm, "it isn't very long before the central staff (personnel men, engineers, accountants, controllers, etc.) "suggest" that their procedures be followed. In due course the new acquisition is thoroughly assimilated into the parent company.

Perhaps we should first ask: "What does decentralization mean?" As a working definition, let's say that, "It is the effective delegation of responsibility for decision-making to the lowest possible level." You will note that geographical delegation is not necessarily involved. In other words, decentralization can and is just as much of

Edward C. Schleh, president of his own consulting firm in Minneapolis, is author of Successful Executive Action *(Prentice Hall, 1955), now in its sixth printing, and* Executive Management of Personnel: Getting Results from People *1958).*

a problem in a one-location firm as in one that has many locations. Geography merely highlights the administrative errors that may be glossed over by proximity. The mere distance and time involved, as well as the cost of developing relationships, makes the crutches normally used in a one-location firm too expensive when the firm is operating at different locations.

As a matter of fact, if a firm decentralizes well at one location, it ordinarily will experience comparatively little difficulty if separated geographically from some parts of its operation. The basic error is that many firms do not truly decentralize even at their home location.

Although all executives would like to really decentralize, to delegate the burden of relatively minor decision-making, there is a natural tendency to work towards centralization. There are underlying management considerations that must be dealt with successfully if sound decentralization is to be effected without chaos. Some of these are:

- The executive must be assured that all the departments are working toward a balanced blending into company objectives—need for centralized control.
- Companies may have loose concepts of necessary authority.
- Companies may have difficulty blending centralized staff without debilitating the line.
- Accounting and record keeping tends to become centralized, in any event, and exercises a strong centralizing influence on other functions of the business.

When executives refer to decentralization, they generally feel that they are speaking primarily of authority. A common error in approaching a decentralization program is the failure to recognize that *first of all* a sound system of accountability must be established. Results expected must be defined for each management person. This process must be carried all the way down, and then solidified into an accountability setup through pay, appraisals, promotions and so on that will encourage all management people to work effectively in the direction of sound company objectives.

Hard-hitting accountability usually requires sound measurement of all operations—of sales, of production, of research—and for every management position. In many firms, centralized accounting systems have only measured the over-all, and have not gone down to individual job measurements. This makes it extremely difficult to decentralize with assurance of executive control.

For continued effectiveness accountability for results must also include an accountability for forward planning. Many of the bottlenecks that occur in decentralized operations develop because planning has been assumed to be a centralized function. It tends to be retained at the top. This tendency is usually the first unwitting step toward centralization. Instead of this, every man who is responsible for a result should also be made responsible for planning ahead to prevent crises in his function. It is only then that you can decentralize authority. Otherwise there are too many loopholes for alibis.

Executives contemplating decentralization must develop a sound concept of authority that can be carried all the way down the line. The basic pitfall is the tendency to hold men accountable by individual errors. Little errors are used as bases for "discussions" with the man. In actual practice, such a procedure often solidifies in the mind of the individual man a concept of authority that is entirely opposed to a real decentralization process. It makes him afraid to make decisions for fear that an individual error will show him up.

For real decentralization you need authority based on broad policy, not minute procedure or "checkup". The wider the leeway that is allowed an individual, the better. He must be allowed to interpret in terms of the individual problems that are occurring at the time. This leads to what we would call the Rule of Errors. We feel its application is absolutely critical to the decentralization process. This rule states that:

¶ If a man is accountable for a result, he must be allowed to make the normal errors consistent with the normal decisions necessary to get this result, and be only accountable at the *end of the period* for the net result and the sum total of errors.

You can readily see that this requires a clear definition of the results expected of a man in a particular period.

A decentralization program can appear to fail in its early stages because of failure to recognize the tolerance in errors required. For example, an executive gives authority to a man. Then the man makes decisions and, before long, an error. This tends to prove to the executive that he can't delegate. He then pulls back authority. He has failed to realize that errors must be part of expected "good" operation.

Executives often fail to realize that decentralization first requires breadth of authority up the line. If the company wishes management at each level to delegate leeway down the line they must themselves have broader leeway allowed them. This requires a broad tolerance of error—and I like to put it just that way. Executives who wish to decentralize at the upper levels must recognize this. Asking upper level management to account for small occurrences down the line destroys this feeling of leeway.

In effect, what I am saying is that each individual management job should be put in business for itself, with an accountability for results and with an allowance to make the errors that would normally occur in arriving at that result. In actuality, this is applying the theories of the free enterprise system to each and every job.

One of the prime problems with any decentralization process is that staff is basically not accountable for worthwhile accomplishment. Staff should be accountable for results that are going to help the P & L. Basically, staff should be accountable for helping the line. The weakness of many staff setups—particularly central staff—is that they have been allowed to get by with "advising," "coordinating," etc. These are statements of activity, and do not lead to strict accountability. As a consequence, staff has an inclination to develop more and more fancy procedures without feeling in any way fully accountable for the detrimental effect these may have on line.

Line should still be accountable for the total result. If they are not, you will gradually weaken the line. What I am saying is that *both* staff and line must be accountable for the full accomplishment of the results where they overlap. In my mind, this is absolutely critical if the decentralization process is to work smoothly at all. Otherwise staff tends to override line with impractical procedures and gradually weakens the line operations.

Central staff should have a responsibility for developing broad policies and programs. As part of this they should be expected to allow leeway within which the individual line units can operate. This leeway should normally correspond to the "results" responsibility of the line unit up to the point where it seriously interferes with over-all company operation.

This leads to another principle, namely that all staff people should report to the lowest level possible. This should be done even if it means breaking up staff positions or departments. It is a common error to assume that because some phase of staff should be centralized in order to get broad over-all control, everything related to that particular function should also be centralized. This is not true! In many, many cases you can break up individual parts of staff operations and refer them right down the line, or at least to a lower-level staff man reporting to a lower line manager.

In some firms, one of the strongest influences toward centralization is the accounting system. It tends to report deviations primarily to the top. This encourages the executive to ask his men about the deviations. Frequently alibis and cover ups, and a feeling of limited authority develop. Good men down the line are weakened.

If accounting is to fit into the decentralization program controllers and accountants should report according to the exception principle and in light of the authority that has been delegated to each management man. For example, only major deviations that are beyond the authority of the second level executive should be reported to the top level. Any other deviations should be reported to the executive concerned. This should be carried all the way down. For instance, if there is a deviation in cost within the authority of a foreman or supervisor, this should be reported to him directly, not to somebody above.

There is also another key point: The controller or accountant should *interpret* the deviation to the man so that the man himself can take appropriate action. You should apply what we call the Action principle:

¶ "Any man who is responsible for a record keeping function should not be accountable for merely providing records, but instead, for providing interpretations currently so that the individual management man can take appropriate action."

This encourages accountants to help the decentralization progress. They are then instrumental in stimulating people down the line to take individual action and to make decisions. They are helping them with information instead of simply spying on them.

In order to do this interpreting well and currently, the record analyst should usually be near the scene of operations. This requirement can become very difficult if record keeping is heavily centralized. This problem becomes aggravated when the branch is segregated geographically from the home office.

To effect sound decentralization, management must set up accountability for results for each management job. A broad concept of authority must be applied that allows leeway—there must be a willingness to accept errors. In addition, sound "results" relationships must be established between central staff (and in fact of all staff) and line operations. Finally, the record keeping functions should be reviewed to provide maximum stimulation of management people—it is only then that a real decentralization process can be effected. This applies whether the firm is a one-location or a multi-location operation. Under these conditions, however, you are capitalizing to a much greater extent on the initiative and ability of the individual management people down the line. A firm that does this will inevitably get greater and greater results without the excessive day-to-day burden of detail falling on a few executives. ■

MEASURING EFFICIENCY (*Continued from page 7*)

Indicator-Card Diagram

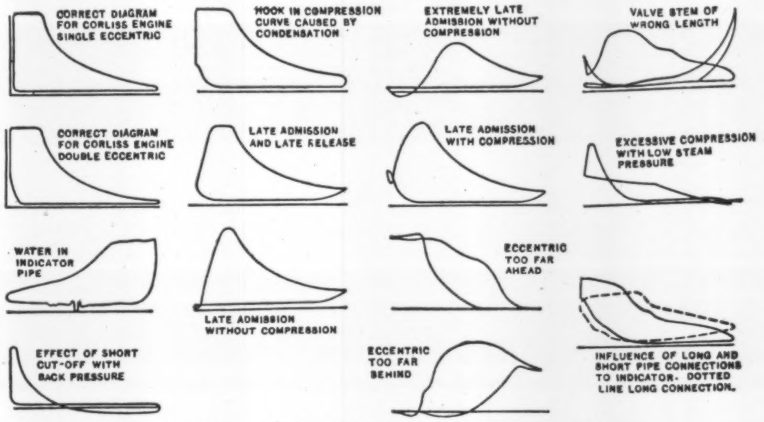

CORRECT DIAGRAM FOR CORLISS ENGINE SINGLE ECCENTRIC
HOOK IN COMPRESSION CURVE CAUSED BY CONDENSATION
EXTREMELY LATE ADMISSION WITHOUT COMPRESSION
VALVE STEM OF WRONG LENGTH
CORRECT DIAGRAM FOR CORLISS ENGINE DOUBLE ECCENTRIC
LATE ADMISSION AND LATE RELEASE
LATE ADMISSION WITH COMPRESSION
EXCESSIVE COMPRESSION WITH LOW STEAM PRESSURE
WATER IN INDICATOR PIPE
LATE ADMISSION WITHOUT COMPRESSION
ECCENTRIC TOO FAR AHEAD
EFFECT OF SHORT CUT-OFF WITH BACK PRESSURE
ECCENTRIC TOO FAR BEHIND
INFLUENCE OF LONG AND SHORT PIPE CONNECTIONS TO INDICATOR. DOTTED LINE LONG CONNECTION.

Fig. 96. Shape of Indicator Cards for Various Engine Defects

Considered as a tool to be used to obtain a better understanding of what has been going on, this New-Period/Base Period Diagram has certain similarities with another tool-like diagram so usefully employed in connection with the designing and the operating of the reciprocating steam-engine,—namely the Indicator-Card. In picturing what is going on within the cylinder of a reciprocating steam-engine while running (or reciprocating oil/gas engine or pump) the Indicator-Card shows whether the admission valve, the cut-off valve, the pressure-releasing exhaust valve and the compression valve are working right and are timed correctly; also what the shapes of the pressure-curves are for the time-periods between the successive valve-actions. Measurements taken from the Indicator-Card are factors in the formula for the "Indicated Horse-Power" which is the accepted measure (or Index-Figure) of the power capacity or performance of a reciprocating steam-engine. From studying Indicator-Card Diagrams the engine-designer learned to overcome the bad effects of 'wire-drawing' at the valves by devising individually-controlled, quick-acting, tight-fitting, large-free-area valves; the bad effects of the too-cold cylinder-wall upon the steam admitted to the cylinder of the single-expansion engine, by designing compound-engines with double, triple or quadruple expansions; and also of great importance, the bad effects of careless or incompetent supervision by the resident operating-engineer in charge while the engine is in service, by shipping new steam-engines only when each had been equipped with a complete indicator-apparatus together with a book of instructions, explanations and warnings.

Herewith is a reproduction of "Shape Of Indicator Cards For Various Engine Defects" reprinted (with permission'*') from Kent's Handbook, which shows some "very queer" shapes of Indicator-cards resulting from faults either (1) within the steam-engine or (2) within the Indicator apparatus itself.

'*' Kent's MECHANICAL ENGINEER'S HANDBOOK — POWER; p. 7-42; 11th Edition, 13th Printing June 1948; John Wiley & Sons, Inc.

when depicting some New-Period value which is a minus quantity.

Similarly, "very queer" shapes of New-Period-Diagram would invite attention (1) to what Management had permitted to happen as to the distribution of Extra-Benefits among the parties-at-interest; or (2) as to perhaps some less-appropriate 'norm-deductible' decided-upon for the New-Period and Base-Period calculations. (The monkey-wrench and the stillson-wrench are very useful tools yet each must have its movable-jaw pre-adjusted to be fully effective.)

Diagrams-In-Series

Since the same data can be employed in different arrangements, TRENDS are clearly observable if a two-fold arrangement of Series-Diagrams is made,—one Series showing the values for each period relatively to those of an agreed-upon single period as Base (or to those of even an imaginary period by using budgeted or forecast or ideal values); and in the other Series, using as Base-Period values for each New-Period Diagram, the running-average of the next-preceding two-or-three periods, the 'year-ago' values, etc.

The two Series-Of-Diagrams "1958/1941" and "1958/1957" shown on these pages, picture the performance of the Management of a well-run enterprise—a public utility—as measured at intervals over an extended stretch of years. Both series employ identical data, i.e. the same original basic facts for each period are used in both series; also the same for the calculation of Benefits, Extra-Benefits & Net-Extra-Benefits, etc., but, as shown on the left-hand page, the diagrams in the 1958/1941 Series relate each period's results to those of a single Base-Period — the year 1941 — and, as shown on the right-hand page, the diagrams in the 1958/1957 Series relate each period's results to the results of the period which it follows.

The arrangement of the diagrams themselves is intended to facilitate comparisons and to put 'earliest years' into a 'farthest background.' The broken-line quadrilaterals shown for 1958/-1941 and 1958/1957 are intended to show the forecast-of-results as such were anticipated early in 1958 when the final figures for 1957 became available.

What the parties-at-interest can be said 'to have gotten out of' the enterprise's operation, is illustrated by the Series-Diagrams which show:

As to "C" (lengths of "OC" lines): Extra-Benefits irregularly greater or smaller in the several periods because of the greater or smaller Need-And/-Or-Desire ascribable to "C" in individual periods. Of course, the 1958/-1957 Series shows variations more sensitively than does the 1958/1941 Series because, in the former any variation in one period has its influence also upon the Diagram of the succeeding period.

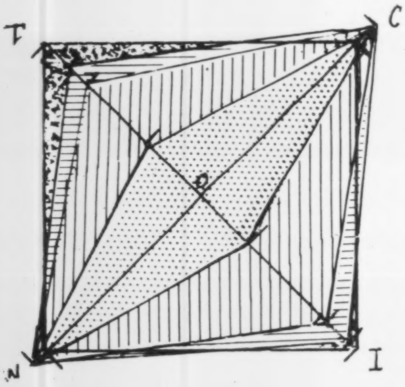
As to "I" (lengths of "OI" lines): Extra-Benefits except in the earliest years, are of about the same dollar amounts. But there were markedly-less Net-Extra-Benefits starting in 1946 when the effects of Inadequate-Depreciation-Charges (shown by vertical shade-lines) and of Dollar-Inflation (shown by horizontal shade-lines) came to be of significant and serious importance. For instance, in studying the Diagrams for 1957/1941 & 1957/-1956 and 1956/1941 & 1956/1951 it is clear that "I" could think that substantially equal Extra-Benefits had been obtained for him in 1957 and 1956; however, when the effects of Insufficient-Depreciation-Charges and of Dollar-Inflation are taken into account, the Net-Extra-Benefits to "I" for 1957 are seen to be only a small fraction of the "I" Net-Extra-Benefits for 1956.

As to "W" (lengths of "OW" lines): Both Series show steadily increasing Extra-Benefit amounts to have accrued to "W", and to an even dangerously-unbalanced extent as can be realized

(*Continued on next page*)

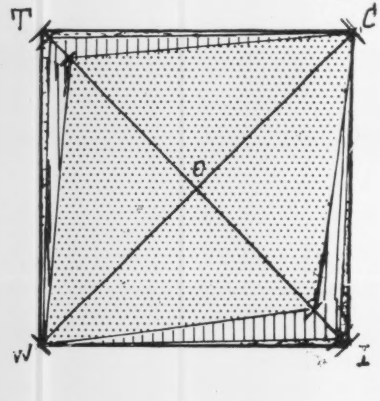
1946/1941

Index Fig. 0.97



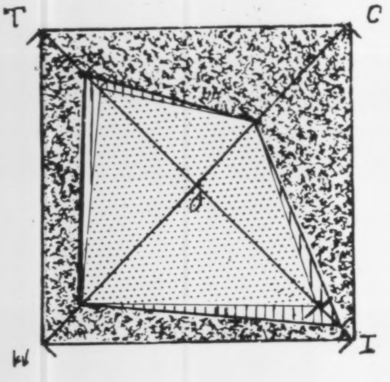
1941 BASE

Index Fig. 1.00



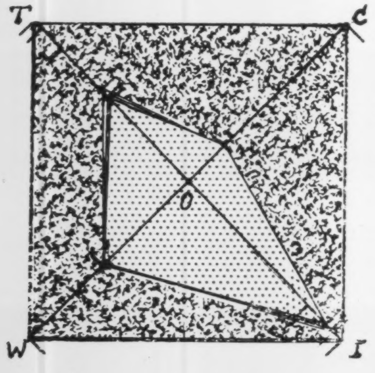
1936/1941

Index Fig. 0.64

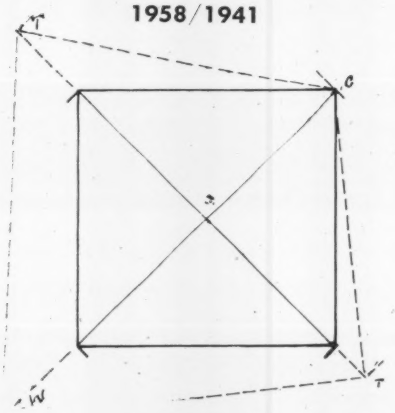


1931/1941

Index Fig. 0.49

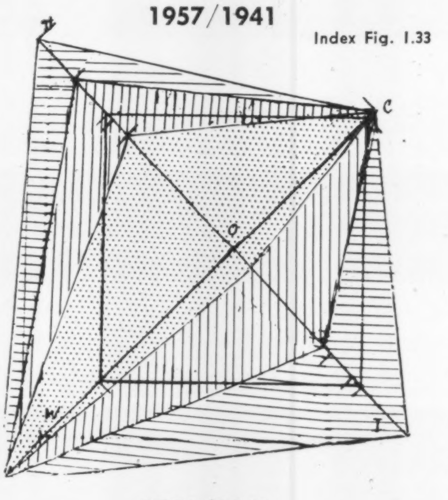


1958/1941



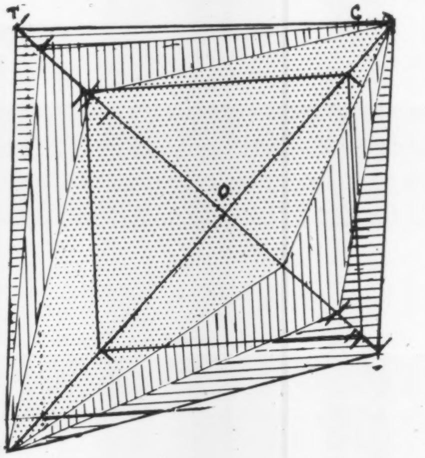
1957/1941

Index Fig. 1.33



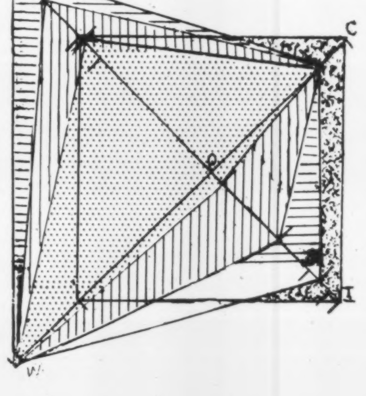
1956/1941

Index Fig. 1.43



1951/1941

Index Fig. 1.06



from an understanding of what happens to "I" if selling-prices are not raised 'to cover the extra costs'; or what happens to "C" and to the Cost-Of-Living if selling-prices are raised. And in the last-mentioned connection, what happens to our foreign markets for American-made goods and to our domestic economy—quantities-wise and broadly prices-wise — if in our own domestic markets American-made are displaced by goods imported from low-labor-cost countries.

The 1931/1926 Diagram strikingly reflects the very considerable additional advantages to "W" which were initiated between 1926 and 1931 in the forms of cash-dividends to "W" in profitable years; higher wages on weekly-pay basis instead of at hourly rates; vacations-with-pay, group-insurance and an extension of pensions to a larger section of the working force; and special discounts to employees on all company-made products or on articles offered for sale to the public by the company (Fringe-Benefits!).

As to "T" (lengths of "OT" lines): The Series-Diagrams picture the facts that profits-taxes were of little significance in the years up to 1945 but thereafter were of a conspicuous importance. The "T" portions of the diagrams illustrate how much of taxes were paid (shown in vertical shade-lines) by the corporation, i.e. by "I", that would not have been payable had Adequate-Depreciation-Charges been allowed; and had a 'reserves-provision' for the effects of Inflation (shown in horizontal shade-lines) been permitted.

In viewing the Areas created by the Extra-Benefit and Net-Extra-Benefit Force-Lines, it can be borne in mind that (1) the bigger the area, the better has been the Management Performance; and (2) a largest New-Period area results when the proportionalities among the parties-at-interest remain the same; meaning (3) that, should the changes in proportions among the parties-at-interest be sufficiently great, the New-Period Diagram might show a zero or minus (negative) area even though the New-Period's grand-total of benefits to all the parties-at-interest was equal to or greater than the grand-total of the benefits to all the parties-at-interest in the Base-Period.

In General

Since the Management function is operative at the several levels of department, branch, division, or over-all, it is practical to make calculations from data from appropriate questionnaires, and to construct Diagrams with their Index-Figures which will have educational, informational, and comparison values of short-term and long-term usefulness at any level.

Whatever the merits of communication-systems employing numerical, statistical, bar-graph, line-or-curve-graph, or pieces-of-pie types of data presentation, the approach and the methods and forms being suggested herein have their additional and very special Use-Values in the presenting, comprehensively, of the measurements and picturings of the inter-related benefits which can be said to have accrued to ALL the parties-at-interest in the operation of an enterprise under its Management.

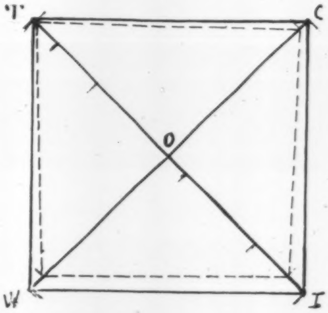
Finally, it is to be pointed-out that the Calculations, the Diagrams and their Index-Figures could be slanted, favorably or unfavorably toward any one of the parties-at-interest by the intentional/unintentional improper use of estimates, assumptions or methods employed. Therefore it is felt there should be established an authority for the certification of the reasonableness and correctness of the assumptions and estimates used and of the calculation-methods which had been followed in any presentation of these Diagrams and Index-Figures. Also that a standing committee of one of the professional societies, such as the Society For The Advancement Of Management, be arranged-for,—this committee to act as such a certifying authority; and that, pending a decision on the establishing of such a committee, it be understood that all rights are reserved.

The American Society Of Mechanical Engineers has such a standing Committee,—The Boiler & Pressure Vessel Committee. Through the many years, this committee has earned the high respect of the engineering profession in general, and in particular of the designers, builders, purchasers and users of pressure vessels. Its recommendations have been of inestimable value to Society in the setting of standards.

Seen in historical perspective, —when Management has been unwilling or unable to arrange for a substantially balanced sharing of Extra-Benefits among the parties-at-interest, Society, through Government has been success-

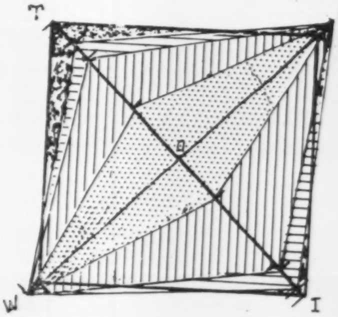
(*Continued on page 30*)

1958/1957



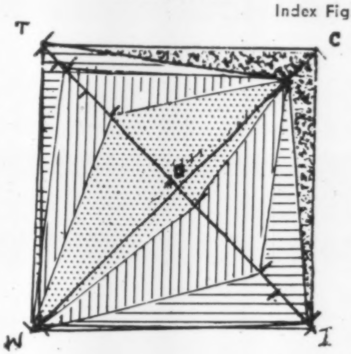
1946/1941

Index Fig. 0.97



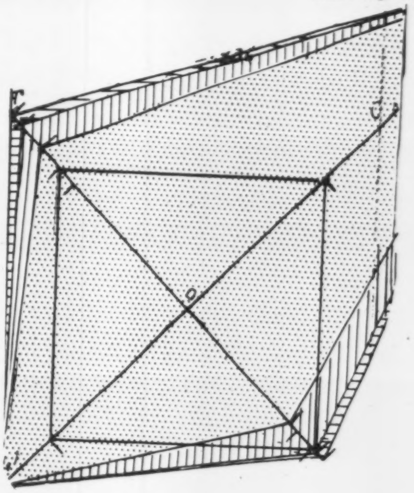
1957/1956

Index Fig. 0.88

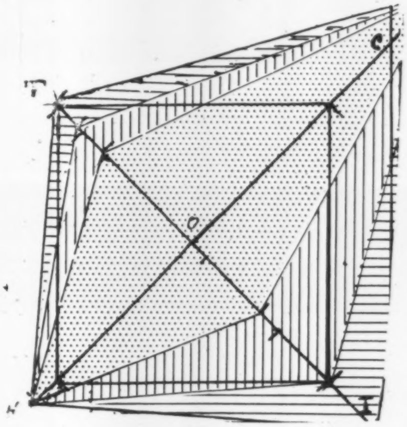


1941/1936

Index Fig. 1.64

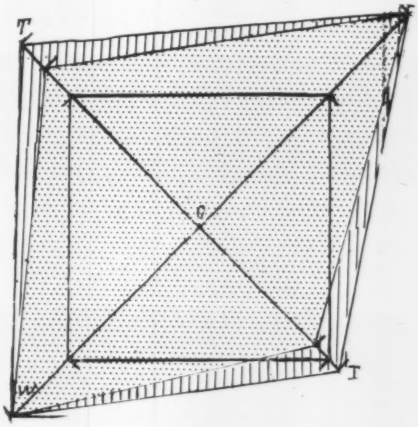


1956/1951



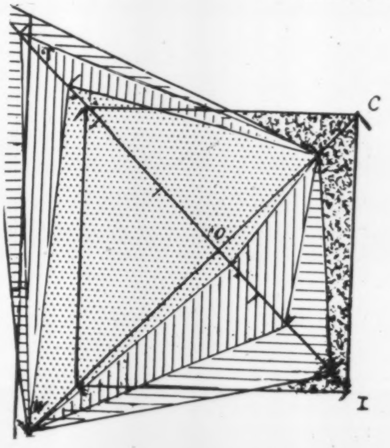
1936/1931

Index Fig. 1.04



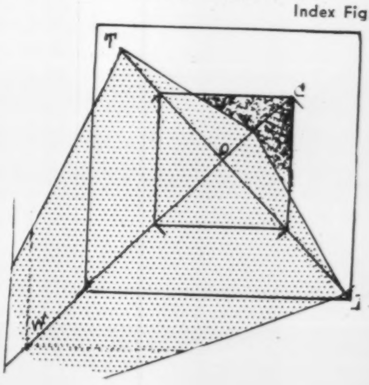
1951/1946

Index Fig. 1.05



1931/1926

Index Fig. 1.65



Measuring Business Performance in . . .

RATE of RETURN

By JAMES H. ROSSELL
and
REUBEN E. SLESINGER

IN SPITE OF repeated attempts to impute non-pecuniary motives as guides for business operations, the test of monetary profits still remains the underlying determinent of success and performance in an enterprise. Although the objective of profitability can neither be denied nor minimized, it is essential that profits be evaluated in terms of both the long range outlook and the immediate return. Good judgment on the part of business management is essential in identifying the goals of any enterprise. Many conflicting actions and decisions must be balanced, and in retrospect it is easy to point to errors in this process. The successful firm will be that one in which management was aware of numerous choices and decisions, considered alternatives, sorted out important activities and lines of business from size and complexity themselves, and on the basis of sound judgment made decisions that could be backed up by facts.

When it comes to judging the success of a business firm, the first question is, how do you "measure" a business? This is an especially significant question for a financial analyst, banker, investor, or lender.. Traditionally, there has been general reliance, in varying degrees to be sure, on certain standard and generally accepted financial analyses and ratios. It has been agreed that measurements such as working capital, current ratios, acid test, net earnings per share, times earned (bond interest), rate of profit on stockholders' equity (both before and after Federal income taxes), net profit on sales, gross profit on sales, turnover of inventories, ratio of stockholders' equity to total liabilities (debt), and many others are of great value. For example, the Federal Trade Commission and the Securities and Exchange Commission publish at least six of the above ratios or measurements in their *Quarterly Financial Report for Manufacturing Corporations.*

At this point it is pertinent to ask, "Why not also 'measure' a business firm in the same manner in which many companies today are measuring themselves?" The concept of "Return on Capital Employed" is a measuring tool that uses sales, invested capital, and net profit as an index to a company's performance. Today management is conscious of how effectively it is using its available capital. Until recently, most businesses emphasized the rate of profit on sales. The possible inadequacy of this measurement, when used alone, may be illustrated by assuming a company with sales of $1,000,000 and a net profit of $100,000. On the surface, a 10% margin of profit indicates a profitable business. But if the capital employed in this same company is $3,300,000, the profit on capital employed is only 3%, about equal to that earned on Series E bonds.

"Return on Capital Employed," though not a new concept, has been widely accepted by management in recent years as a tool for measuring performance. Today the top managements of many companies are of the opinion that a company's performance should be measured by the profit earned on the capital employed in the business. This performance, the rate of return on capital employed, is measured as follows:

$$\text{Rate of Return} = \frac{\text{Net Income (Profit) for the Period}}{\text{Total Capital Employed in the Business}}$$

The rate of return on capital employed is dependent upon two factors. The first of these, the margin of profit

CAPITAL EMPLOYED

James H. Rossell
Professor of
Accounting
University of
Pittsburgh

Reuben E.
Slesinger
Professor of
Economics
University of
Pittsburgh

"Capital for expansion purposes is not unlimited. Therefore, true growth companies should be distinguished from mere expansion companies."

on net sales, is measured as follows:

$$\text{Margin of Profit} = \frac{\text{Net Income (Profit) for the Period}}{\text{Net Sales for the Period}}$$

The second factor, turnover of capital employed, is determined as follows:

$$\text{Turnover of Capital} = \frac{\text{Net Sales for the Period}}{\text{Total Capital Employed in the Business}}$$

To illustrate the application of rate of return on capital invested, the condensed financial statements below will be used:

Berry Company
Balance Sheet, as of December 31, 1958

Assets		
Current Assets		$ 5,800,000
Property, Plant, and Equipment	$14,800,000	
Less Accumulated Depreciation to Date	5,600,000	9,200,000
Total Assets		$15,000,000
Liabilities		
Current Liabilities		$ 3,000,000
Long-term Debt		3,000,000
Total Liabilities		$ 6,000,000
Stockholders' Equity		
Capital Stock Outstanding	$ 5,500,000	
Reinvested Earnings	3,500,000	
Total Stockholders' Equity		9,000,000
Total Liabilities and Stockholders' Equity		$15,000,000

Berry Company
Statement of Income, for the Year 1958

Net Sales	$30,000,000
Less Cost of Goods Sold	20,000,000
Gross Margin on Sales	$10,000,000
Less Selling and Administrative Expenses	7,000,000
Net Income before Federal Income Taxes	$ 3,000,000
Less Federal Income Taxes	1,500,000
Net Income for the Year	$ 1,500,000

The rate of return on capital employed for Berry Company may be determined directly, without resort to the two dependent factors, as follows:

$$\text{Rate of Return on Capital Employed} = \frac{\text{Net Income}}{\text{Capital (Total Assets)}} = \frac{\$\ 1{,}500{,}000}{\$15{,}000{,}000} = 10\%$$

However, in order not to slight consideration of the two dependent factors which result in the 10% return

Using the forecast of a business index furnishes a basis of

SALES FORECASTING

by J. E. Cotter

IN ORDER to forecast sales either by projection or by trying to correlate them with a related business index, one must first determine the trend of the level of past sales, and do it accurately.

To get the required accuracy, we have to remove as many as possible of the factors that cause apparent fluctuations. Thus, we need first of all to consider sales rates in terms of the daily rate for the particular business being studied. For example, a used car establishment may be open every day, so that its monthly sales would be measured by the total number of days in the month. Conversely, a new car dealer closed Sundays would measure his daily sales rate by the number of week days in the month.

Thus we establish an accurate measuring stick for the rate of sales over different periods by reducing them to daily rates during each period, preferably on the basis of incoming orders. The next step in analyzing the past trend of a business is usually that of determining its seasonal variations. Weekly, rather than monthly data are effective tools for ascertaining both the actual rate of the business, and its level. But lacking weekly data, as do most business enterprises, we settle for the next best thing — the average daily rate for each month.

A convenient method of determining seasonal variation calls for plotting the ratio of the daily rate of sales for each month to the daily rate for a twelve-month period—including the given month and extending perhaps five months prior to it and six months after. With a history of about five years' sales, the ratio of five Januarys, five Februarys, and so on, can be used to produce a chart similar to Figure One. Mathematical techniques exist to determine whether or not the seasonals for each of the months exhibit a trend; usually, however, an estimate of the seasonal for each month, made from the chart as developed in Figure One, will afford ample accuracy. Next, we adjust these estimates of the averages of the yearly pattern to total 12.00. One will seldom require accuracy in a seasonal greater than ± 0.01; most are valid only to ± 0.1.

It should be noted at this point that any months displaying understandable irregular movements should be ignored in determining the average seasonals for such months. An example would be the hyperactive buying that follows a steel strike. In Figure One, the August and September points for 1952 and 1953 were ignored in developing the seasonals.

With the average seasonals established, we can rechart the data for all the years as levels of business — i.e., the actual rate in any given month, seasonally corrected to express the level of business.

If it appears that the trend of sales is linear, then we apply the method of least squares to the seasonally cor-

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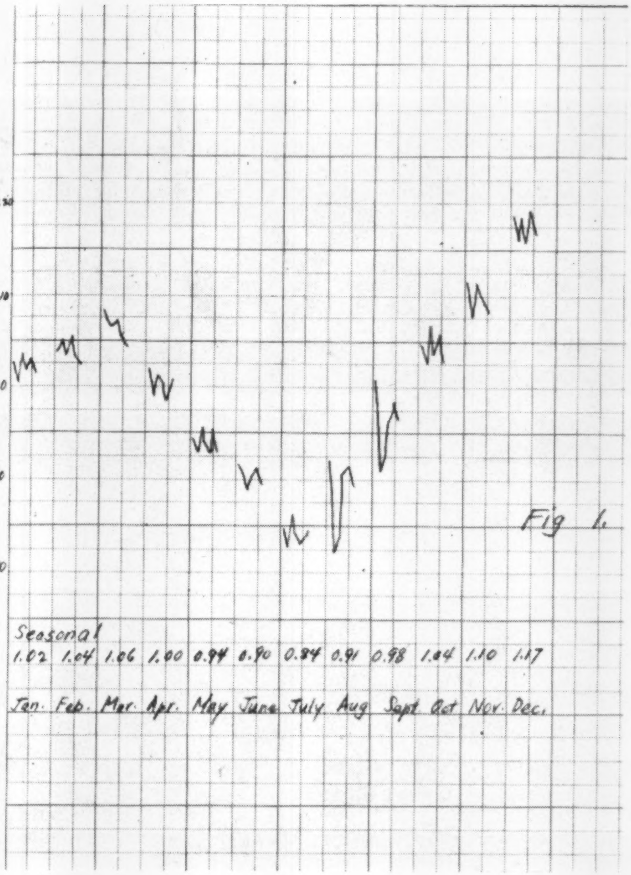
Manager, Audit
and Control
Behr-Manning
Co.



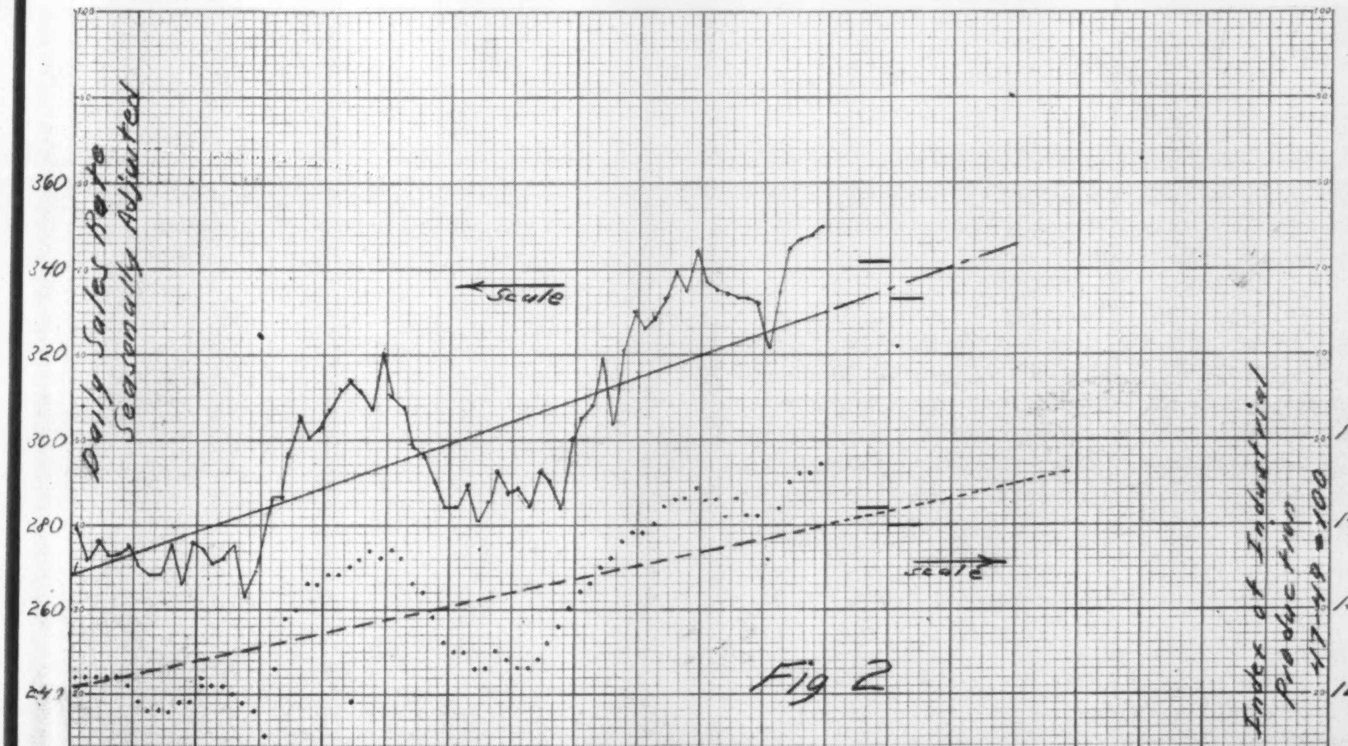
rected data to determine the sales trend. In this particular case we might arrive at a trend line of the observed data represented by the solid straight line of Figure Two.

One can see that the monthly sales level has varied above and below the straight trend line over the period covered by the sales curve. Knowing the particular business and the factors that influence it, we can often arrive at a business or economic index which might reasonably be expected to influence the particular sales curve. Normally, these indices are published not only as unadjusted, but also as seasonally corrected monthly figures. Using the seasonally adjusted information, we can plot the index in question to get a preliminary, estimated evaluation of our contemplated correlation.

From the dotted line of Figure Two, it will be noted that this has been done with the Federal Reserve Board Index of Industrial Production, and that its trend line has been developed in the same manner as that for the sales curve. Clearly, the variations of the Industrial Production Index about its trend line are similar to those of the sales curve about its.

Significantly, the slopes of the two trend lines differ. In correlating a particular sales curve, it is not sufficient to make a simple scatter diagram of the respective monthly figures because the basic trends are changing at different rates. To make a valid correlation of the two curves on our scatter diagram, we have to take, for each specified period, the deviations of the sales curve and the index from their respective trend lines.

(*Continued on page* 22)



UNIONIZATION O

> ***"Unionism . . . stands ready to fill the void when management fails to recognize the engineer's desire for status and prestige in the company."***

THE CLOSE personal relationship that once existed between the salaried engineer and his employer has almost completely disappeared from important segments of American industry. Its disappearance left a void which engineering unionism seeks to fill. The present article examines several of the factors behind this development, including reasons given by engineers for forming and joining unions, the position of the professional engineering societies in regard to unions for engineers, and basic differences between "professional" unions and production unions. Because these factors are so closely related, they are discussed as a whole rather than in separate sections of the article.

The breakdown in the personal relationship between engineer and employer can be attributed in large measure to the current trend toward mass employment of engineers, as for example in the aircraft, missile, and atomic energy industries. In this sense, the mass employment of engineers is also responsible for the growth in size and importance of engineering unionism. According to predictions of the labor economists, engineers and technicians will constitute a steadily increasing proportion of the nation's workforce in the years immediately ahead. They base their predictions on the expanding use of the new techniques of automation and mathematical programming, and the new methodologies such as operations research; each of which requires men with technical and scientific training. Men with such backgrounds presently constitute the bulk of the membership of the Engineers and Scientists of America—the largest engineering union in the country, which gives rise to the prediction that engineering unionism will grow along with the growth in demand for engineering talent.

Employers of large numbers of engineers, whether unionized or not, have an important stake in the current struggle between rival elements within the engineering unionism movement. One faction would admit technicians and sub-professionals along with professionals; the other would admit only professionals. Those who favor a strictly "professional" union are in control at the present time. In their view, engineers are not part of the labor movement, have no particular kinship with those who are, and organize only to make use of those features of the national labor laws which are useful to them. The difference between an all-professional union and a mixed union of professionals and non-professionals is important to employers, because the mixed union is more likely to follow the collective bargaining pattern set by the AFL-CIO, is a better possibility for eventual affiliation with the AFL-CIO, and may be more inclined to cooperate with production unions in support of each other's bargaining demands.

In order to fully appreciate the importance of the schism within the ranks of engineering unionism, it is necessary

ALARIED ENGINEERS

by Jack F. Culley

Director, Bureau of
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to have some knowledge of the history and characteristics of this branch of the union movement. Contrary to popular opinion, the unionization of engineers is not a recent development. Its history goes back at least to the first World War when the old AF of L granted a charter to the American Federation of Technical Engineers. This union is now an affiliate of the AFL-CIO and claims a mixed membership of 15,000 engineers, technicians, draftsmen, and others. Engineering unionism had little influence, however, until the latter part of the second World War when thousands of engineers employed in the nation's defense industries organized employee associations and began to bargain collectively with their employers.

Salaried engineers employed in west coast aircraft and shipbuilding plants were among the first to organize. They justified their action on the ground that if they did not organize their own bargaining units, they would be included in bargaining units controlled by non-professional employees. They also noted that unionized employees in the skilled trades were winning wage increases at a time when unorganized employees were being denied comparable increases. Behind these reasons was a sense of lost professional status resulting from being hired en masse, assigned to do draftsmen's work, and required to punch time clocks alongside production workers. Their collective bargaining terms frequently included demands for overtime pay for more than forty hours of work in a week, call-in pay, travel allowances, and field bonuses.

It might be concluded from the preceding paragraph that the collective bargaining demands of engineering unions are little, if any, different from those of production unions. In some respects this is true, but in other ways they are unique. For example, most production unions prefer across-the-board wage increases while engineering unions favor salary increases given on a percentage basis. The latter method favors the higher paid jobs and thus helps to offset the telescoping effect of the blanket increases which trade unions have traditionally received in the past. Percentage increases also help to restore some of the salary differential between the young engineering graduate and the engineer with years of service; a differential that has grown uncomfortably narrow in recent years as company recruiters have vied with one another for engineering talent.

The employment problems of the salaried engineer have not gone unnoticed by the organizers for blue collar production unions. As mentioned earlier, there is a growing trend for blue collar unions to claim jurisdiction over white collar workers, including engineers, in plants where they represent the production workers. For example, the Electrical Workers, the Auto Workers, and the Steel Workers Unions have extended the limits of their jurisdiction to include not only office workers, but also technicians, engineers, and scientists. The strike of white collar workers at the Chrysler Corporation in November, 1958, involved salaried engineers as well as technicians, office employees, and production workers. It was only an incident, but it gave a preview of what can happen when a blue collar union organizes both white collar and blue collar employees in the same company.

Employers sometimes question the right of engineering employees to organize for purposes of collective bargaining. The law in this regard is quite clear. Salaried engineers are no different from other employees in their right to self-organization, including the right to form or join unions and to bargain collectively through representatives of their own choosing. This right is guaranteed them under the National Labor Relations Act of 1935, popularly known as the Wagner Act. The National Labor Management Relations Act of 1947 (Taft-Hartley Act) adds the right to refrain from such activities, provided the union and the company have not entered into an agreement (union shop clause) requiring membership in a labor organization as a condition of employment. In states having right-to-work laws it is, of course, illegal to require union membership as a condition of employment. In states without such laws, and there are thirty of them at the present time, the existence of a union shop clause in a contract covering a bargaining unit that includes engineers could operate to require that every engineer join the union as a condition of continued employment.

At one time, the National Labor Relations Board was inclined to include engineers in bargaining units made up primarily of non-professional employees. This situation was protested by professional societies and by employer associations in the Congressional hearings that preceded the enactment of the Taft-Hartley Act. As a result, the law was changed so that professional employees could be put in the same bargaining unit with non-professional employees only when a majority of the professional employees voted to be included in such a unit. The amended law defines a professional employee as one whose job demands a specialized type of knowledge usually obtained at college. The possession of a professional degree or of a high degree of skill is not, however, sufficient by itself to qualify an employee as a professional if his job does not require the use of his training.

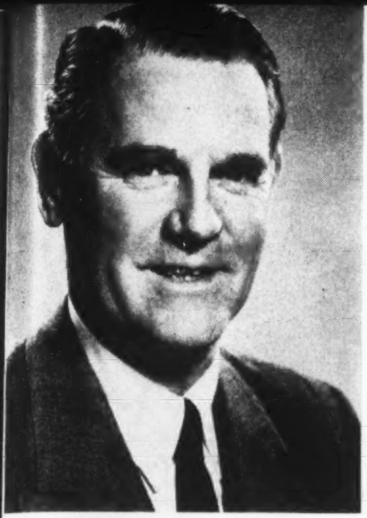
The most outspoken critics of engineering unionism are the professional engineering societies. Editorials and articles appearing in society journals suggest that unions may be all right for manual workers, but not for professional persons whose interests are much more closely identified with management than with labor. There is an implied if not direct accusation that the engineer who joins a union lowers not only his own status, but also that of the profession of which he is a member. The imputations are the same whether the engineer affiliates with a union that takes in non-professionals, or joins a union that restricts membership to graduate engineers. The societies insist that unionization brings the engineer closer to the status of a production worker, rather than strengthening the distinction between the two groups as professional unions claim to be their objective.

Many strong critics of engineering unionism are found within the ranks of management. Their criticism includes the charge that engineering union representatives sometimes have difficulty in separating technical correctness from practical personnel action, with the result that the union representative may prefer to see a principle uncompromised at the expense of harm to the company. Other executives describe a tendency for engineering unions to carry grievances through to arbitration in cases that would normally be settled in the early steps of the grievance procedure were a production union involved. Labor relations directors report undue difficulty in attempting to bargain with representatives of engineering unions whose positions in the company have led them to assume that they have inside information on company operations; information that too often proves to be both incomplete and inaccurate.

A number of large employers of engineering talent have adopted policies specifically designed to help the engineer achieve professional recognition in his field and status within his organization. Such policies provide for the payment of professional society dues, for time off with pay to participate in professional meetings, and for the subsidization of advance graduate studies. General Motors, for example, offers engineering personnel an opportunity to obtain professional recognition through participation in engineering society forums, through presentation of technical papers at society meetings, and through the winning of patents.

The stand taken by engineering unions and that taken by management and the engineering societies are not at variance on every subject. Each agrees, for example, that industry should be more liberal in its usage of the symbols of professionalism, such as titles and degrees. William S. Caples of Inland Steel Corporation, a widely quoted spokesman for management, has predicted that the title of "doctor" will some day be as commonly used in other areas of industry as it now is in company research and medical departments. Similar proposals have been advanced from time to time by the engineering unions and by the National Society of Professional Engineers. The latter advocates a cooperative professional development program in which industry would recognize and stress the professional status of the engineer, in return for which the engineer would accept his share of management responsibility.

Another point of agreement between the engineering unions and the professional societies concerns the engineers' need for the services of the professional societies. The unions acknowledge the value of the societies' services and encourage their members to support them. The principal point of difference concerns the question of how well each organization, union and society, represents the economic interests of its members. The union advocates direct action in the form of collective bargaining. The society stresses the financial benefits to be derived from membership in a professional group with high admission standards. Where the union claims that only it can effectively represent the individual engineer in bargaining for salary increases or in processing grievances, the society counters by charging that such action reduces the professional person to the status of a production worker and is the surest way of permanently blocking his desire for greater prestige and higher status in the company.



Edward McSweeney
Vice President and Treasurer
Perkins-Goodwin Company

How do you score on leadership?

by EDWARD McSWEENEY

"The best kind of leader . . . can solve a problem in humanics almost as fast as he can add two and two."

WHAT IS GOOD BUSINESS MANAGEMENT? Stripped down to its essentials, it is leadership.

It implies other things, of course—many other things. But most of them are related closely to the basic quality of leadership. It implies knowledge, for example. But knowledge is a part of leadership; you can't lead effectively unless you know the field in which you're leading. It implies initiative, too; but this, again, is a part of leadership. So are almost all the other qualities that you normally associate with a high-caliber executive: intelligence, honesty, organizing skill, self-confidence.

All these things go to make up leadership. But there is still more to it than that. You can have intelligence, initiative, knowledge and organizing skill, and still not be a leader. What more do you need?

There's a widely-held belief that the real essence of leadership lies in some mystic gift of character with which some people are endowed at birth. Possibly there's an element of truth in this; even in a group of small children, you'll often see one boy or girl who organizes the games, solves the problems, leads the others around—and, what's more, makes them like it. But the existence of born leaders does not preclude the possibility that a man can make himself a leader by his own efforts. In fact, it's probably quite safe to say that the majority of today's executives have done just that.

How? What is that extra power that they have gained for themselves? It is the subtle, complex, but by no means mysterious art of handling people. The best kind of leader is a man who has trained himself so highly in this skill, through years of practice, that it has become almost instinctive. He can solve a problem in humanics almost as fast as he can add two and two. In any situation, within any set of human relationships, facing any problem, he knows what course to take; and—with the self-confidence of the highly skilled—he takes it.

How do you score on leadership? Here's a compilation of twelve questions covering the most important areas of the art. If you can answer yes to all twelve, you're a good leader.

- *Do you really lead, rather than drive?*

A good leader gets his group moving so smoothly toward its goal that it continues to move even when he's absent. A man who drives his group from behind, however, can confidently expect the whole effort to collapse the minute he turns his back. The leader's subordinates move because they want to; the driver's because they have to.

- *Do you always remember that a man is not a piece of equipment?*

He's not something placed in the office at your disposal. He's a human being with his own hopes, fears, problems. Treat him with respect and consideration; otherwise, you can't expect to get the best out of him, and you may get the worst.

- *Do you stay off a pedestal?*

You can't hope to understand your group or earn its respect if you stand off from it in lonely superiority. It's a good idea to remind yourself every now and then that, rather than the group's serving you, you are supposed to be serving the group—giving it the guidance and cohesion it needs to reach its goal.

- *Do you let people feel important?*

No man can do a good job if he doesn't respect himself in that job. He can't be interested in it if he doesn't feel it's worth doing.

- *Do you let people feel successful? And as one test of this . . .*

- *Do you compliment a subordinate who has done an unusually good job?*

A sense of success is one of the best tonics to keep a man happy and effective in his job. But to get this sense of success, he must be told by his superior that he has done well; he can't always assess his results for himself.

- *Do you back your subordinates up?*

One of the surest ways to lose a man's respect — and with it, his willingness to accept you as a leader — is to lead him to a position where he needs help, and then deny him that help.

- *Do you explain yourself ~~fully~~?*

Remember, again, that you are dealing with men and not machines. A machine doesn't need to be told why it must perform a certain job. But a man does. If he isn't made fully aware of the need for that job, its place in the group project as a whole, the reasons for doing it this way instead of that way, he can hardly be expected to go about it intelligently or even enthusiastically.

- *Do you keep your fears to yourself?*

Every project ever undertaken is haunted, to some degree, by the possibility of failure. It is the leader's business to consider this possibility and work out means of avoiding it. If he's a good leader, he won't constantly talk of his fears to his subordinates in the hope that they'll bolster his morale. On the contrary, he should make himself a source of confidence for the group to draw on.

- *Do you listen patiently to grievances?*

It's wise to bear in mind that, no matter how petty or unreasonable a grievance may sound to you, it's most important and entirely reasonable to the man making the complaint. If it weren't, he wouldn't be making it. By refusing to listen, you run the risk of dissatisfaction and dissension within the group, and you weaken your stature as a leader.

- *Do you criticize in private?*

To humiliate a subordinate by criticizing him before the group gains you nothing. It merely incurs the subordinate's animosity, and may entirely nullify the effect that you hoped the criticism would have — that of making him work more effectively.

- *Do you trust your subordinates to carry out their responsibilities?*

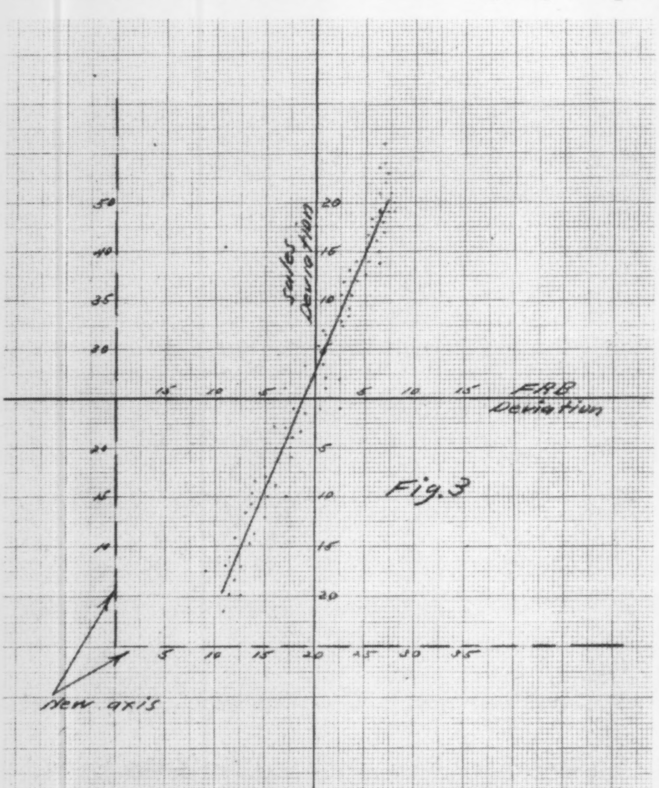
Constant meddling on your part can only lead to dissatisfaction; for one thing, it will decrease your subordinates' feelings of importance and success. You are supposed to be the group's leader, not its jack-of-all-trades. Once you have assigned responsibilities in the group, your job is to exercise a broad, general guidance.

When you have checked yourself against these twelve questions, try to get someone else's assessment of you to compare with your own. Ask one of your subordinates to score you on the twelve points; then ask your immediate superior to do so.

What are the results? Are you a good leader? ■

SALES FORECASTING *(Continued from page 17)*

For the example shown in Figure 2, this will produce a scatter diagram as shown in Figure 3; there it will be observed that usually when the sales curve is above its trend line, the index is also above its line, giving two plus values. The point representing this condition falls in the first quadrant of the scatter diagram. Similarly, when the sales curve is below its trend line, the same will be true of the index curve. In this case, the points fall in the third quadrant. In contrast, it will be noted that in some cases one curve will be above, while the other is below; these points fall in the second and fourth quadrants.



Once we have developed a scatter diagram of this type, we need only shift the axis so that all points are included in the first quadrant of the new axes, getting a trend line of the correlation as shown in Figure Three. Depending on the degree of probability desired, it is also an easy matter to correlate the possible variation of the correlation of two sigma limits (99.5 per cent probability) or of three sigma limits (99.7 per cent probability). This allows us to evaluate the expectable accuracy of the correlation if the two items correlated have a meaningful relation.

Other things being equal, given a future forecast of the external index (the Federal Reserve Board Index of Industrial Production) for a specific time, we can determine the amount of deviation from its trend line. We can reasonably expect that a related degree of deviation of the sales curve from its trend line, as determined from the correlation diagram of Figure Three, will probably occur; accordingly, we can arrive at a forecast of the sales level for the specific time in the future as shown in Figure Three for the second and third quarters of 1957.

This technique of ariving at a sales forecast based on a forecast of a business index is slightly more involved than those commonly used. Nevertheless, it will be found that the correlation will maintain its validity over a longer period, and will produce more accurate sales forecasts than will simpler methods. ■

on capital, it is advisable first to compute both the margin of profit and the turnover of capital. Then the multiplication of these two factors will give the rate of return on capital invested. To illustrate:

$$\text{Margin of Profit} = \frac{\text{Net Income}}{\text{Net Sales}} = \frac{\$\ 1{,}500{,}000}{\$30{,}000{,}000} = 5\%$$

$$\text{Turnover of Capital Employed} =$$

$$\frac{\text{Net Sales}}{\text{Capital (Total Assets)}} = \frac{\$30{,}000{,}000}{\$15{,}000{,}000} = 2 \text{ times}$$

The rate of return on capital employed is dependent upon, and is the result of, the margin of profit and the turnover of capital employed. The 10% return on capital is understood more clearly when it is determined in the following manner:

$$\text{Rate of Return on Capital Employed} =$$

$$\text{Margin of Profit} \times \text{Turnover of Capital Employed}$$

$$\text{Rate of Return on Capital Employed} = 5\% \times 2 \text{ times}$$

$$\text{Rate of Return on Capital Employed} = 10\%$$

Some rather arbitrary decisions were made in the preceding discussion concerning the dollar amounts used in the formulae for various items. The amount used for "net income," $1,500,000, was the net income for the year after Federal income taxes. When measuring performance of a company over a period of years, management may prefer to use the amount of net income for the period before the deduction of Federal income taxes, so that comparisons are not distorted by a fluctuating tax rate. Another alternative, in order not to ignore the significant impact of income taxes, is to adjust net income amounts by assuming an arbitrary constant tax rate of 50 per cent for Federal income taxes when making comparisons over a period of years.

For "capital employed in the business," $15,000,000, total assets was used as the measure of capital. This method of determining capital employed emphasizes the point that management is charged with earning a profit on the total capital employed in the business, regardless of source (i.e., short term debt of $3,000,000, long term debt of $3,000,000, and stockholders' equity of $9,000,000). In addition to the method used in this illustration (total assets according to the balance sheet) other methods encountered in practice are:

- Average total assets (e.g., average of assets at the beginning and end of the fiscal period).
- Total assets less current liabilities (i.e., stockholders' equity (net worth) plus long debt).
- Total assets with the dollar amount for property, plant, and equipment adjusted for the changing price level when such assets were acquired over a period of years.

More important than the particular method used to determine net income or capital invested is that the method be employed consistently over the years in order not to distort comparisons.

It must be remembered that different types of businesses cannot be compared on a single basis, such as margin of profit or turnover of capital. "It is the combination of the two, the return on the capital employed, that supplies the common denominator required for comparison."[1] For example, dependent upon the type of business, one company may have a combination of high profit margins and low turnover, while another may have a low profit margin but a high turnover. To illustrate, based on figures taken from 1958 annual reports:

	Margin of Profit	Turnover of Capital	Return on Capital Employed
Weyerhaeuser Timber Company (Year Ended December 31, 1958)	12.1 %	.763	9.23%
Proctor & Gamble Company (Year Ended June 30, 1958)	5.65%	1.713	9.68%
United States Steel Corporation (Year Ended December 31, 1958)	8.7 %	.78	6.79%
Penn Fruit Co., Inc. (Year Ended August 30, 1958)	1.4 %	4.60	6.44%

Both Weyerhaeuser Timber Company and Proctor & Gamble Company had a rate of return on capital employed slightly in excess of nine per cent, but the extremely different character of the two businesses required their obtaining the return in different manners. A similar situation exists with respect to United States Steel Corporation and Penn Fruit Co., Inc. (a retail food chain). While both companies have a rate of return of six plus per cent, margin of profit is the predominant factor by which United States Steel obtains the return, whereas turnover of capital is the significant factor through which Penn Fruit Co. produces its return on capital.

Rate of return appears to be a relatively stable indicator when measuring the performance of a company over a period of years. It should be an aid in determining whether a company is a growth company or merely an expansion company. Over a period of time, an increase in the dollar amounts shown on the financial statements of a company may indicate expansion in the sense that the company is larger. However, the company may not be a growth company; it may be simply "fatter." This point was emphasized by T. G. Mackensen, special studies analyst for the H. J. Heinz Company, when he stated, "True growth comes from the ability of management to employ successfully additional capital at a satisfactory rate of return. The company that is merely expanding at declining rates of return on investment will eventually be brought to a stop by lack of expansion capital."[2]

Capital for expansion purposes is not unlimited. Thus it will flow to the more profitable businesses. Therefore, true growth companies should be distinguished from mere expansion companies. It appears logical that those who are to provide the capital, by investment or by short or long term loans, should measure the company's performance in the same manner that the managements of many companies measure performance—rate of return on capital employed. ■

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[1] "Return on Capital Employed — A Measure of Management," F. J. Muth, *NACA Bulletin*, February 1954, pp. 704-705.

[2] "Modern Techniques of Financial Analysis for Management Planning: An AMA Symposium," Editorial Staff, *Journal of Accountancy*, February, 1954, p. 175.

THROUGH COACHING . . .

progressive training and development

by Sterling D. Huggens

> ***"Actually, we don't really develop our people but we do control or effect changes in the external conditions influencing their development."***

DURING THE PAST ten to fifteen years, industries have promoted many fancy programs for the training and development of their people. The application of these programs has often been referred to as the "shot-gun" approach to training since they were administered without regard to individual needs. Many of these approaches have since been labeled as fads.

We are now beginning to realize that we have complicated this business of developing our people and that we have overlooked some simple and inexpensive approaches to our problems.

At the Twelfth Annual Conference of the American Society of Training Directors in New York City, Dr. Spencer Hayden, consultant with Richardson, Bellows and Henry, made this statement. He said there are actually four types of training possible:

- The conference method handled by a trained leader.
- The conference method handled by a supervisor or member of the conference group.
- Individual coaching conducted by an immediate supervisor.
- Self-development training conducted by the individual himself.

Dr. Hayden pointed out that more emphasis needs to be placed on the last two methods. It appears that very few companies ever give thought to the coaching aspect of training. For those of you who claim you don't have time to train or to help your subordinates develop, here is a sure-fire solution. It has been estimated that 80 per cent of all training takes place through on-the-job coaching. Since this is an individual method, every minute or every hour you spend with a subordinate gives you an opportunity to coach and help that employee improve his performance.

The advantages of this type of approach are obvious. You don't need to devote any time away from the job. It will work for you whether you have a work force of two or two thousand. It works equally well with line or staff. It is an approach that will work in all departments of your

Sterling D. Huggens
Manager, Camden Training
Radio Corporation of America

. . . it takes a good boss to stay on the sidelines.

company. It is definitely an economical approach.

If you are interested in learning about this simple, yet effective approach for the development of your employees, you may wish to focus your thinking on the following four questions as we explore the topic.

- What is coaching?
- What effects does it have on the employee work group?
- What can you do to put the coaching approach into
- What does a good coach need to know?

effect?

Coaching is sometimes thought of as the interpersonal relationship between a man and his boss, regardless of level of organization. It may involve directing the movements of, issuing an order, imparting a skill, instructing or guiding an employee. It is not a "gimmick"or technique to be applied as a panacea for all your problems but a "way of living" and working effectively with others on the job. It is getting people to get things done on a cooperative basis.

We associate coaching with the training and development of our people. Actually, we don't really develop our people but we do control or effect changes in the external conditions influencing their development. Coaching is a way of doing this. Through it we are able to motivate our people so they themselves develop their dormant potential. Surveys have shown that people want to do a so-called "good day's work." Through proper coaching we remove the barriers that prevent them from doing so. Such barriers as insecurity, lack of confidence, insufficient challenge, lack of understanding and others. In this way we bring out and get them to use a greater percentage of the talents they many times unknowingly possess. Through proper coaching we can become more effective in delegating and hence improve our performance as a manager or supervisor. Coaching will help us to improve the morale and production of our employee work group. We will gain new loyalty from our subordinates and it will help us to improve our total operations.

A good coach has often been referred to as one being a good teacher. Some have said that good teachers make good leaders. We think of a leader as a person who needs to know how to motivate people, to know how to delegate, to know how to plan and organize his work. These are often referred to as basic skills. Coaching is also a skill and a trait of a good leader. It is not a technique that can be turned on and off as we do a water faucet. Too often we have created the impression with supervisors that all they need to do is to turn on the right technique at the right time and all their problems would be solved. Training is still trying to win the confidence of many management people as a result of these earlier errors.

A good coach needs to know how to apply basic theories and principles to problems that have been known for many years. Since the term, "coaching," is synonymous with the sports world, it would be well for us to consider what a coach of perhaps a football team does in the process of training and developing his team. This will enable us to develop some guides that we may use in our daily coaching.

GUIDE: *He starts where the man is — not where he wants him to be.*

A good coach doesn't start with the most complicated plays in the first week unless the individuals being coached have had prior experience. He takes into consideration the experience and background of his team. He may have them run a series of plays to test their performance and knowledge to determine the best starting point.

GUIDE: *He works on only as much as the individual can absorb.*

The coach usually works on one play at a time. Some men can comprehend more than others and, therefore, may remember many plays and may practice them all in one evening. Then again the number of plays practiced may depend on the urgency of the matter — how far away the first real game is in respect to time.

GUIDE: *He has people do because they learn best by doing.*

The coach has the men practice the play many times with intermittent coaching because he knows they learn by doing. Practice and repetition aid in developing skill and proficiency. Here is an example of our powers of retention. We remember:

- 10 to 15 per cent of what we hear.
- 15 to 30 per cent of what we hear and see.
- 30 to 50 per cent of what we say.
- 50 to 75 per cent of what we do.
- 75 per cent through supervised doing *(coaching).*

These figures give some idea of the importance of *doing* in the development of subordinates.

GUIDE: *He uses demonstrations and illustrations.*

The coach in discussing a play will use illustrations and diagrams. He may paint a word picture by the way he describes the play. In some cases where it is a practice game he may even run the play to illustrate his point. He will also use visual aids where necessary to drive his point home.

GUIDE: *He allows for individual differences.*

The coach realizes that every man on his team is different — that they all have their strengths and their weaknesses. He realizes also that the same individual may feel different on different days. He allows for these differences in dealing with them on a day-to-day basis. One doesn't have to be a psychologist to deal with people. Common sense will often reveal the problem and dictate the solution.

GUIDE: *He creates a climate of confidence.*

The coach knows that to win the game he must command (not demand) the respect of every man on his team. We often refer to this as teamwork. The coach doesn't expect to gain this by one practice game but by constant association and work with the team members. He knows the value of soliciting their comments and suggestions on certain items. He also realizes that they may have problems from time to time that need to be listened to and understood. He wins their trust and their confidence by his interest in them and by his displayed sincerity and integrity.

GUIDE: *He stays on the sidelines.*

Please note, the coach stays on the sidelines during the real game. He may take a man out for special instructions or re-coaching but lets that man carry the ball. In the process of delegation we have a similar situation. It takes a good boss to stay on the sidelines. He has to have confidence in the individual to the extent of allowing him the opportunity to make mistakes if need be. This is effective delegation in practice.

GUIDE: *He sets a goal and explains the standard of performance.*

Each man on the team likes to know where he stands. To be measured adequately he has to know what the coach expects. The goals that are set must be fair and the individuals on the team must have a share in setting them up whenever possible.

The standard of performance is established by competition which changes from time to time. It is important that the coach impress this upon his team.

Communications are essential so that the members of the team know what is happening and how much progress they are making.

GUIDE: *He follows-up by observing progress and doing repeat coaching.*

The coach knows that big stars do not develop in a week but over a period of years. He observes the team's progress and corrects and re-coaches as necessary. It has been estimated that it takes 30 to 60 repetitions to establish a habit. This in itself points out the need for much practice and follow-up.

We could go on developing additional guides by reflecting on the experiences of coaches in the sports world. The guides we have developed above in themselves will provide excellent guidance for you in your attempt to understand and employ better coaching on the job.

To put the coaching approach into effect, you will have to make a concerted effort to practice the various coaching guides when working with your people. You may find it easier to concentrate or practice on just one guide at a time in your working relationships. The amount of attention you devote to this form of working with your people will determine how soon and how thoroughly this way of working becomes second nature to you—and it must become habit or second nature to you to be effective.

You as the boss are your subordinates' best teacher. You should be spending much time teaching and imparting your experience to the subordinates in your work group. To do this will require coaching your people in accordance with well defined goals of achievement. If you have an appraisal program in your company, you will find needs revealed by the appraisal session that will help serve in setting these goals.

If you have a training function within your organization, you may wish to have them organize a program to promote the coaching approach throughout your supervisory ranks. You can hold conferences to discuss the various GUIDES and the successful experiences the members of the group have had in the past in implementing them. You will find many new ideas emerging from conference sessions on this topic and the members will come up with additional GUIDES that have proven effective for them over the years. The conference leader must, however, guard against the group's tendency to put too much emphasis on GUIDES as panaceas for solving all their problems. They must be made to realize that they are not hard and fast rules for coaching, but are as they imply—merely GUIDES. The conference leader must impress upon the members that the principles and philosophy involved in their implementation are most important.

Whenever you are in doubt about coaching a subordinate in a situation, stop to think for a minute about a football coach. Try to draw an analogy from the way you feel he would handle this particular situation. This will begin to give you the feel for COACHING and you will find it an enjoyable experience. The more you practice with COACHING, the more you will improve your managerial performance on the job. As your subordinates develop and grow—so will you! ■

John J. Cunningham is Industrial Relations Representative, E. I. du Pont de Nemours & Co., Inc.

There are rich dividends from . . .

READING TRAINING FOR PROFESSIONAL TECHNICAL EMPLOYEES

By **JOHN J. CUNNINGHAM**

WHY READING training for professional employees? A reading program is costly, both in time and money, and particularly when the participants are professional people, such as engineers or engineering supervisors. The skill involved—reading—was acquired in grammar school. Individually, such people have spent thousands of man-hours at this activity in acquiring their education and professional know-how. A manager might well ask, "why reading training for these people?" — and answer the question by looking thoughtfully at his own mailbox, brief-case, and his desk drawer used for storing "to be read" reports.

The importance of reading to professionals is widely recognized; normally their work requires a large amount of reading. The engineer particularly faces rapid obsolescence of his technical know-how unless he maintains an active reading program. A survey which was made by du Pont several years ago indicated that engineers and supervisors within our Engineering Department spent an average of nine hours per week on job-related reading. Discussions with many individuals concerning their reading work-load indicates that this figure is a conservative estimate of the reading load at the present time.

● Engineers Slower in General

On the other hand, people who work at training of adult readers recognize that experienced engineers, in common with some other professional people tend to be slow readers. Our experience at du Pont bears this out. We have found that 25 per cent of the people entering our program read general material at a rate of 250 words per minute or less. Half of them read at less than 300 words per minute. In comparison, for the same test, 12th grade students have a median rate of 260, and a 3rd quartile rate of 299 words per minute.*

These facts point up the need for reading training. Professional engineers face a reading load that is heavy in volume and demanding in nature, yet a large percentage read at rates which would scarcely be creditable of a good high school reader.

Can this situation be improved? We think so — and more importantly, participants in the du Pont program report real improvements.

● 12 Reading-Writing Sessions

The program which we developed to assist our engineers and supervisors consists of twelve sessions of one and one-quarter hours each. It may be of interest that the reading program is usually combined with a writing improvement program. Our concept is that the skills are closely related and the work done to improve either ability will mutually support work done to improve the other.

In developing the reading program we visited several industrial firms and universities active in this field. Information gained in these visits convinced us of the advisability of a balanced approach to reading improvement. Actual design of the program was done in consultation with Dr. Harry T. Hahn, Director of Instructional Services, Oakland County Schools, Pontiac, Mich. He spent six weeks with us in the spring of 1955, assisting in presenting a trial program to three pilot groups. Succeeding groups were instructed by members of our training staff.

The program objectives given to the participants in the first session are to:

Develop speed.
Practice skimming.
Improve vocabulary.
Organize for reading.
Stress need of critical reading.

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*Source: Directions for Administering Diagnostic Reading Tests published by the Committee on Diagnostic Reading Tests, Inc.

(*Continued from page 27*)

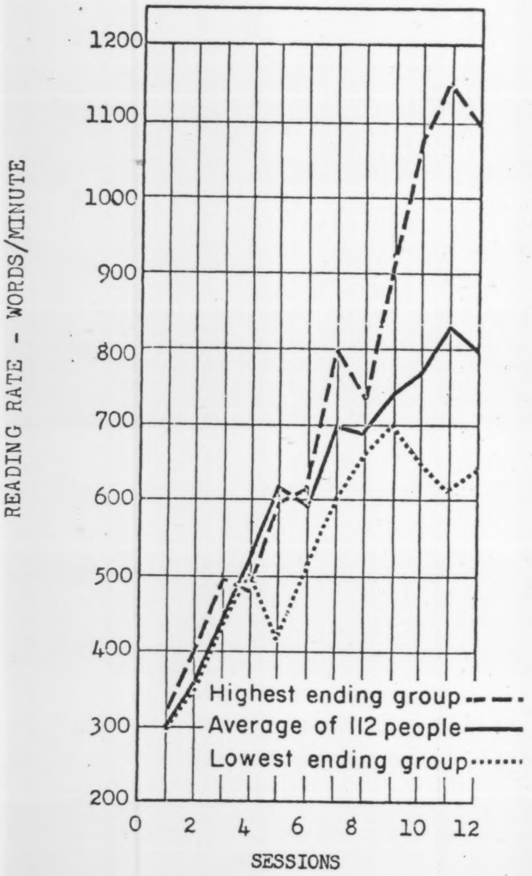
Several tests are given in each session, one of which is recorded as a measure of group progress. Upper-level Diagnostic Survey tests are used in the first, fourth, eighth, and twelfth sessions. Brown's *Efficient Reading* and Strangs' *Study Type of Reading Exercises* are used in the sessions. Participants are loaned copies of Lewis' *How to Read Better and Faster* and Judson and Baldridge's *The Techniques of Reading.* Assignments for home study are made in each of these texts including the recognition drills and tests. Participants are advised to give daily attention to the assignments.

Reading accelerators are used in sessions two through six. Brief Tachistoscope drills on numbers and phrases are conducted in sessions seven through twelve. These mechanical devices help many of our readers "get off the ground" in increasing reading rate and improving concentration. We feel, however, their chief value lies in adding interest to the sessions.

Two vocabulary tests are given. In the first session, participants do the vocabulary part of the Diagnostic Survey Test and the Michigan Vocabulary Test is assigned as home work.

RANGE OF GROUP RESULTS

AVERAGE RESULTS - 112 PARTICIPANTS



● Competition Induced

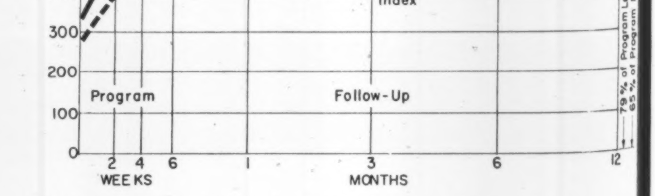
Each group is divided into two sub-groups of about equal average reading ability as shown in the first session survey test. Progress of sub-groups is plotted on a large chart. At the beginning of each session, the chart is shown to the entire group and progress of the sub-groups is reported and discussed. This technique is used for two reasons: It induces an element of competition between the sub-groups and it allows each participant to compare his own achievement with that of the small sub-groups.

Results of the vocabulary tests are reported back in such a manner that each participant can compare his own scores with the averages for his group and the averages for previous participants. These tests are useful in detecting the few individuals, in this type population, who may have serious reading deficiencies and should be referred to remedial reading specialists.

Time is allowed in each session for discussion of aspects of reading related to the program's objectives. These include the need of organizing for reading, setting a purpose for reading, varying rate according to subject matter, importance of vocabulary, and relation of the training experience to on-the-job reading. The instructor frequently stresses the importance of individual effort and application.

Each instructor has made some modifications in the program as experience was acquired and in accordance with the progress of different groups. Background is enlarged by conducting follow-up tests and by discussing on-the-job reading. The charted tests, however, are the same for each group.

RESULTS OF FOLLOW-UP TESTS* OF 45** PARTICIPANTS



* Only scores of upper level diagnostic survey tests are charted

** Note variation of N in table 2

Table 2

	Program				Follow - Up			
Test –	1st wk	2nd	4th	6th	3wks	3mo	6mo	12mo
N –	45	45	42	43	25	36	12	8
Comp %	79	72	72	71	74	73	72	85

Reminder exercises intended to stimulate the participants and to remind them of principles covered are sent out periodically for a year following the program. These exercises are self-administered and the results are not recorded.

Increases in reading speed during the program are rather dramatic. We find that even the slowest of entering readers are able to achieve 100 per cent or more improvement. For most readers the improvement exceeds 100 per cent and a fair number have obtained 200 per cent improvement. These improvements have been gained without loss in comprehension, which is substantially the same at the end of the program as it is at the beginning. Some readers are pleasantly surprised to see a substantial improvement in their comprehension early in the program. Most readers, however, tend to drop in comprehension as they try to force their speed, but with improvements in confidence and concentration, they will usually regain or improve their initial comprehension.

This striking improvement during the training situation is fine in itself, but the payoff occurs in retention of skill following the program. We have conducted follow-up tests with about one-third of the participants. Results of the tests for the first 45 participants are shown on the accompanying chart. Similar testing of following participants has yielded results which agree with those charted.

• The Long-Range Goal

From our follow-up testing program for the early participants of the program plus the results of tests which we are now conducting, we feel confident that a 70 to 75 per cent retention of the gain in reading level remains constant for at least one year following the training experience. It is this long-range net gain which makes the program worthwhile.

A more difficult question is application of the skill gained to on-the-job reading. The material read in the program is general in nature. We have not found technical material for training use which is sufficiently common to all participants. We recognize that on-the-job reading is different from the reading in the program in terms of purpose, motivation, subject matter and the participants' background.

For these reasons we have not attempted to measure participants' skill in their job reading either before or after the training program. Informal interviews and discussions with participants following the program reveal the following subjective opinions:

- They make a greater effort to select the material which must be read carefully.
- They do more skimming of material which is familiar or is non-essential.
- They are conscious of the pace at which they are reading job material and make deliberate attempts to increase speed when the nature of the material permits this.
- They feel that the program has helped them in their on-the-job reading.
- They recommend the program to their peers. This results in numerous requests from individuals to participate in the program.
- They state that they do their off-the-job reading much faster than before.

While it is not practicable to evaluate on-the-job application in numerical terms, participants do express general satisfaction and a feeling that the program has been beneficial to them. This is encouraging and is evidence that reading training is an important aid to busy professional people. ■

Management and Our Way of Life

Private enterprise must remain willing and able to pay its fair share of the cost of defending our way of life against all aggressors, but it must also take the lead in opposing the waste and extravagance which result from economic tinkering and political selfishness. Management must self-govern its collective conduct in order that there may not be a basis for further imposed regulation by government. Management must assume the responsibility for seeing that the sixty million people which it directs are given the facts about their economic life, and about what is happening and can happen to it. There is no other segment of our society which is willing to do, or capable of doing, this job.

Management must take every possible step to ensure that the logic and common sense principles of scientific management, which is used internally, also are applied to the external factors which govern the atmosphere and conditions under which it must operate. False ideas which stand in the way of reaching our objectives, whether they be internal or external to our particular enterprise, must be dealt with promptly and effectively. People who promote false ideas must be silenced by overwhelming logic.

We must never forget that those who would oppose our way of life have available to them these same tools of scientific management. They may be used to organize the forces of destruction as well as to strengthen the forces that *build* and *defend* our freedom.

American business, then, must devote itself to using these tools to better advantage than do its foes. In war, *tools become weapons.* In this unrelenting war between business and the would-be wreckers of our American system, the tools of scientific management, skillfully used, can become the greatest weapons for defense of our enterprise, our free thought and our high ideals. We must beat them to the punch.

General Brehon Somervell

"A Philosophy of Management and Management's New Responsibility."

UNIONIZATION

(Continued from page 20)

Engineering unions possess a number of interesting characteristics which set them apart from production unions. One example is the use of the term "employee association" rather than "union" to designate the organization of engineers set up to engage in collective bargaining. Another is the avoidance, in some instances, of even the terminology of trade unions. In such cases, the union steward becomes a "counselor" and a strike becomes a "work stoppage." The distinction is also apparent in the membership itself. Members of engineering unions have carried the idea of being "different" to the point where they have refused to be included in the same bargaining unit with technicians and other sub-professionals. The engineers argued that their work was more creative than that of the technicians and required a sense of professional status and pride which the latter did not possess.

The differences between professional and non-professional unions are reflected quite clearly in their respective contract provisions. The professional unions want greater recognition for individual performance and, as a result, their contracts often contain provisions for a merit rating system. This is in sharp contrast to the general distrust of such practices evidenced by many production unions. As mentioned earlier, engineering union contracts usually call for pay increases on a percentage basis as contrasted with production contracts which normally call for across-the-board increases. The engineering union's efforts to make adequate contract provisions for the exceptional individual run contrary to the traditional trade union philosophy of treating all alike, and constitute one of the basic differences between engineering unions and production unions. They also illustrate the dilemma that sometimes faces the professional engineer who is a member of a blue collar production union.

Some of the blue collar unions which are now organizing salaried engineers have been experimenting with various organizational means whereby the engineers can maintain their separate identity while joining with office and production workers for purposes of collective bargaining. The Automobile Workers Union, for example, has se up an Aircraft and Avionics Engineering Council within its Aircraft Department for this purpose. The unions recognize the whipsaw possibilities inherent in a situation where they represen both the blue collar and white collar employees, and are beginning to make special efforts to interest office and professional employees in joining thei organizations. The blue collar unions are also aware that the number and proportion of white collar workers in the labor force are growing rapidly and that they must either organize them or accept minority status at the bargaining table.

Management is equally well aware of these developments and of the large stakes that are involved. Yet relatively few firms have devised policies and programs aimed at the development of a working atmosphere in which the desire of these employees for status and prestige will be given full recognition and encouragement. Continued indifference to this problem can only widen the gulf between employer and employee, with unionism, in one form or another, trying to fill the void. ■

MEASURING EFFICIENCY

(Continued from page 13)

ful in resisting and/or correcting the bad effects of disproportionate sharings. Toward the end of the last century, Congress initiated anti-trust legislation to limit the Investor-Owner monopoly powers. During and after the Depression Years, Congressional legislation dissipated the excessive Customer-Extra-Benefits implicit in too-low prices. Currently the Congress is adopting legislation intended to limit the arbitrary powers present in today's organized labor and is talking a lot about reduction of Federal taxes; the Administration is studying what is to be recommended about Inflation; and the Treasury Department seems to incline toward a more flexible and reasonable interpretation of the regulations bearing upon Inadequate-Depreciation-Charges. Can it be expected that Society will fail to give attention to "Management Itself" should Management, in the future, be seen to have been inefficient in its handling of company-policy matters or to have been 'hardly fair-and-reasonable' as to details of operation within Management itself?

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